Sound and the Ancient Senses

Butler, Shane,Nooter, Sarah

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THE SENSES IN ANTIQUITY

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EDITED BY SHANE BUTLER AND SARAH NOOTER

ROUTLEDGE

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ROUTLEDGE

Sound and the Ancient Senses

Sound leaves no ruins and no residues, but it is experienced constantly. It is ubiquitous but fleeting. Even silence has sound, even absence resonates. *Sound and the Ancient Senses* aims to hear the lost sounds of antiquity, from the sounds of the human body to those of the gods, from the bathhouse to the Forum, from the chirp of a cicada to the music of the celestial spheres.

Sound plays so great a role in shaping our environments as to make it a crucial sounding board for thinking about space and ecology, emotions and experience, mortality and the divine, orality and textuality, and the self and its connection to others. From antiquity to the present day, poets and philosophers have strained to hear the ways that sounds structure our world and identities.

This volume looks at theories and practices of hearing and producing sounds in ritual contexts, medicine, mourning, music, poetry, drama, erotics, philosophy, rhetoric, linguistics, vocality, and on the page, and shows how ancient ideas of sound still shape how and what we hear today. As the first comprehensive introduction to the soundscapes of antiquity, this volume makes a significant contribution to the rapidly growing fields of sound and voice studies and is the final volume of the series, *The Senses in Antiquity*.

Shane Butler is Nancy H. and Robert E. Hall Professor in the Humanities and Professor and Chair of Classics at Johns Hopkins University, USA. He is the author, most recently, of *The Ancient Phonograph* (2015), and editor of *Deep Classics: Rethinking Classical Reception* (2016). He is also co-editor, with Mark Bradley, of this series, as well as being co-editor, with Alex Purves, of its first volume, *Synaesthesia and the Ancient Senses* (2013).

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The Senses in Antiquity

Series editors: Mark Bradley, University of Nottingham, UK, and Shane Butler, Johns Hopkins University, USA

Like us, ancient Greeks and Romans came to know and understand their world through their senses. Yet it has long been recognized that the world the ancients perceived, and the senses through which they channelled this information, could operate differently from the patterns and processes of perception in the modern world. This series explores the relationship between perception, knowledge and understanding in the literature, philosophy, history, language and culture of ancient Greece and Rome.

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Sound and the Ancient Senses

Edited by Shane Butler and
Sarah Nooter

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Audio

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Acoustic impression of a speech by Cicero delivered from the Rostra to the Comitium (in Latin), from the perspective of an audience member standing in the Comitium at a distance of 20 m. Speaker: Adriano Evangelisti. Auralization: Christoph Böhm, Felicitas Fiedler, Stefan Weinzierl.

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Introduction

Sounding hearing

Shane Butler and Sarah Nooter

Sound and the Ancient Senses is the final volume in the series *The Senses in Antiquity* and brings to its scheduled close an enterprise that began by considering the senses in union and confusion (*Synaesthesia and the Ancient Senses*) and then proceeded to tease those senses back apart in order to examine them singly, dedicating a volume to each. Neat separation, however, has proven to be neither possible nor desirable. Indeed, this difficulty was anticipated in the decision to maintain the phrase *and the Ancient Senses* as the second half of each volume's title, following the name of the single sense to which it was primarily directed: *Smell and the Ancient Senses*, *Sight and the Ancient Senses*, etc. What, however, was not anticipated at the outset was how each single sense would raise at least some crucial themes not common to all five and so invite distinct approaches and organization. The series, we believe, has achieved its stated goal, in the introduction to its first volume, of assembling a whole that is more than the sum of its parts, but it has done so, rather unexpectedly, by allowing each of those parts to take its own somewhat distinct shape.

This is especially true in regard to the present volume, beginning already in its title. Why "Sound" rather than "Hearing"? The latter might at first seem to correspond better to the titles of the preceding volumes: *Smell*, *Sight*, *Taste*, *Touch*. "Hearing" has the added, if etymologically accidental, merit of embedding in its own alphabetic flesh the name of its primary organ: the ear. The matter, however, is rather more complicated than it first seems. In English,

one can, in the case of three of the five senses, employ words from the same root to name both the sense and its object. For example, we may go to a faraway place to "see the sights"; while there, we may "smell smells" to which we are not accustomed; so too, we may, in the exotic local cuisine, "taste the taste" of something unfamiliar. We cannot, however, "touch touch", although we may be inclined to say, with Maurice Merleau-Ponty, that every act of touch is an act of touching touching, that is to say, an encounter with the very fact of (reciprocal) contact.[1] Nor, surely, can we say "hear hear", except to mean something very different from what we are trying to say now. Rather, we "hear sounds", keeping sense and object distinct via a divide that can be traced all the way back to the two words' separate Indo-European roots (**kous-* and **swen-*).[2]

What are we to make of this linguistic insistence in keeping the objects of hearing linguistically detached from the sense that receives them? Although the meaning of "hear" may seem neutral enough, its use in the practice of Western thought has been, again and again, to limit the range of sounds to which our senses can or should be applied. A careful investigation, therefore, must begin by asking if there is a primacy to sonic objects over the act of hearing them, to sound *as such*. In antiquity, sound was often said to be everywhere, whether or not anyone heard it: it was in the heavenly spheres, as we will explore below; it gave contours to the landscape of the universe and fathomed the depths of soul. Even if we privilege the human subject whose sensory perception works both to accept and to refuse input, we can and should still ask at what point our sense of hearing intervenes in the realia of sound, and on what principles of selection. This is why we have decided to lead not with "hearing" and its (human) selectivity, but with the broader spectrum of sounds both heard and unheard, interpreted or excluded.

"Did you hear that?" The question instantly provokes uncertainty and suspense. Perhaps someone is there. Perhaps no one is there and we are imagining things. Perhaps someone both is and is not there, and we are being haunted by a ghost. To listen to and for the sounds of antiquity is, more often than not, to remain suspended between these three options. The other senses, up to a point, are different, especially with regard to time. One can still see the Acropolis and the Roman Forum, even if not in their pristine state. One can run one's hand along the surfaces of their surviving stones, discovering that the marble of which one was built feels different from the marble of the other. Taste and smell are more elusive, but a bottle of olive oil bought at a supermarket roughly resembles a recurring stimulant of both these senses in ancient life. But sound leaves behind no directly accessible ruins or residues. Hence the ephemeral nature of sound was, for Augustine, paradigmatic of the impermanence of human existence.[3] Yes, we have the poems of Homer and the

speeches of Cicero. But to hear them, we must read them aloud, which means we must listen to ourselves struggling to reconstruct what their languages, rhythms, metres, and music (assuming we even make an effort to go this far) once sounded like.

This situation produces something of a paradox. In our everyday lives, arguably more than any other sense except smell, sound shows a persistent ability to reach us unexpectedly and even against our will. "The ears are the only orifice that cannot be closed", Lacan quips in one of his seminars, which themselves were first received aurally.[4] Along similar lines, R. Murray Schafer, commenting on what makes hearing "a special sense", observes,

> The sense of hearing cannot be closed off at will. There are no earlids. When we go to sleep, our perception of sound is the last door to close and it is also the first to open when we awaken… . The eye points outward; the ear draws inward. It soaks up information.[5]

But all of this is based on our present-tense, real-time experience of sound. Listening to and for the past, by contrast, especially in the case of the distant, ancient past, takes both conscious work and active imagination.

This is not to say, however, that ancient sounds no longer demand our attention or have lost their ability to surprise us. The first sound in Greek literature, for example, is terrifying even to a reader: it is the "clang" (*klangē*) of Apollo's wrathful bow, echoing the sound of the verb for the piercing sound the arrows make (*eklanxan*) as he shoots; to the Greek soldiers, falling from the pestilence that these arrows bring, it is as though night has come. But of course this is not the first actual sound a listening audience would hear: that would be the syllables of *mēnin*, the term that designates the divine wrath of Achilles, which is also death-bringing. Only the expansive, open syllables of the very second word of Western poetry bring the promise of relief, order, future and memory: *a-ei-de*: sing.[6]

That the Greeks and Romans were music lovers has never been a secret. Early Modernity, for example, summons no less ancient a figure than Orpheus – the legendary first poet, older even than Homer – to get the singing going in the very first operas. According to the ancient myth, Orpheus sang his verses so beautifully that, in order to listen, animals, rocks and uprooted trees gathered around him; rivers too stopped flowing and the wind stopped blowing.[7] Simonides tells us that birds flew and fish leapt in time with his song and Horace calls the oak trees that surround the poet "eared" (*auritae*).[8] Orpheus' human audience of Maenads nonetheless shouted him down and tore him apart, but we are told that his decapitated head sang on and his lyre continued to play as they floated down the Hebrus river.

For a long time, modern understanding of ancient music often seemed positioned hopelessly far downstream from such sounds, straining to hear

melodies that had faded to murmurs long ago. Attempts to conjure the actual sounds of ancient music from the fragmentary record of the past began to meet with substantial success quite recently, when fresh attention to ancient texts of music theory joined newly discovered examples of ancient musical notation. Martin West's 1992*Ancient Greek Music* was a major synthesis that came atop the publication in the 1980s of two volumes of *Greek Musical Writings*, edited with extensive commentary and analysis by Andrew Barker. An appreciation of the range of recent work on the subject can easily be had by consulting the online bibliography compiled by Moisa (The International Society for the Study of Greek and Roman Music and its Cultural Heritage), which currently includes over 2500 studies published just since the turn of the millennium.[9] As those studies reveal, ancient music raises scholarly questions that range far beyond the reconstruction of just what sounds its singers and instrumentalists produced. Furthermore, the importance of such work to our understanding of ancient literature embraces not just texts that, once upon a time, were wholly or partly sung, such as the Homeric epics and Greek tragedies, but also unsung poems that were pointedly referred to in antiquity as "songs". Thus Vergil's *Aeneid*, echoing the Homeric opening we heard a moment ago, begins with *Arma virumque cano*, "Of arms and the man *I sing*".

At the same time, ancient discussions of music sometimes take us to very unexpected places. Plato's Socrates tells of the "music of the spheres", that celestial harmony generated by the eminently rational wheelworks of the universe. Those harmonious orbits, he explains, are akin to movements within our souls. We are meant to imitate the orbits of the cosmos by pursuing harmony closer to home, quieting our uproars and upsets, and reining in the unmeasured passions that drive us off our intended course.[10] This may be the first articulation of the idea of a cosmos regulated by sound and, indeed, by sound in its most internally coherent form – music. The picture seems to arise from the bare proposition that sound is everywhere all the time, too ubiquitous ever to attend to consciously and constantly. But what if we could? What would we find to be the sound beneath the sounds of day-to-day life? For Plato, the answer is utter and absolute harmony, a grand auditory fiction whose euphony could be echoed by the quiet, private sounds within the soul. Like Plato, Pythagoras too hoped that certain sounds would quiet the tempers of our soul and sought a way to systematize and organize the faculty of hearing. In the end, the story goes, he instead systematized our sense of sound by creating the scale, putting order into music and thence into our lives and moods.[11]

Such lofty thoughts necessarily were built upon more basic understandings of what ordinary sound is and does, with ancient writers offering no shortage of attempts to understand its nature and mechanisms. The very words

available in Greek and Latin to describe sound, voice and hearing helped to shape ancient thought on the subject. In Greek there is a wide range of words for sound that range from "noise" (*psophos*), a word that carries a derogatory connotation, to "thud" (*ktupos*), a term that signals the act of beating that has created it, to the word for "sound" that blurs into a word for voice: *phōnē*. A *phōnē* can be *just* a sound, but when it means "voice", it generally means the voice *as* sound. That is, it connotes the sheer materiality of voice in both its reception as well as in its expression. *Phōnē* thus situates the voice on a spectrum that includes bird songs, bull roars and trumpet blasts.

From here the terms used to designate voice in Greek fan out, often indicating not just vocal sound but also the ontological status of the speaker. Homeric poetry gives us *omphē*, the voice of the gods. This kind of voice is conceived of as separate and impossible to hear, or at least impossible to hear as a god would hear it. There are also shades of vocality that blur the boundaries between gods and men: *ossa* is divinely connected but circulates among men in various forms, both monstrous and awe-inspiring; *opa*/[*ops*] is the voice in song that is usually (though not always) vocalized by a female, whether divine or not, but also heard in certain expressive animal noises, although in Hesiod it is limited to the voice of gods.

Humans have their own panoply of vocabulary for voices. Whereas the *phthongē* (or *phthongos*) is the voice of an individual human, the *audē* is an essentially human voice, and (yet) it is sometimes applied adjectivally to divine voices or to animals and objects when these non-humans are able to be understood by human listeners. For example, Achilles' horse briefly gains an *audē* to prophesize his master's death, and Hephaestus' robot-maids are said to have *audē* indefinitely. Calypso and Circe are both capable of accessing the quality of *audē*, speaking, singing and chanting from across the divide of divinity as a *deinē theos audēessa* ("a fearsome, human-speaking god").[12]

Our word in English for all things hearing-related – acoustics – comes from the Greek verb "I hear" – *akouō*. In Greek, this same root gives the abstract form of the word, *akoē*, used both for the act of hearing and for what is heard, bridging a divide between "hearing" and "sound" as no word in English does. Another word for "hear" in Greek is *kluō*, which can also mean "to know of something" (that is, to *have heard*). Both words can be joined with adverbs like "well" or "badly" and can come to mean "be spoken of well", "be spoken of badly". In English, then, our idiom for this state of reputation points to the speaking side of orality, but in Greek, repute is evoked as an act of hearing. Hence, the fame of heroes, as imported by poets and their Muses into the memory of men, is *kleos*, a word cognate with *kluō*. This "hearing" is a mortal's best shot at immortality and underlies great swaths of Greek poetics. Finally, a Greek person could also "perceive by sense" – in particular by ear or

eye – through the verb *aiō* or the slightly more abstracted *aisthanomai*, whence comes the notion in Greek of *aisthēsis*, "perception by the senses", the root of our "aesthetics", although that word did not really acquire its modern sense before the eighteenth century.

In Latin, the basic word for sound is *sonus*, the source, via French, of English's own "sound". "Voice" in Latin is *vox*, likewise the root of our word. Following the Stoic divisions in Greek, Latin writers on linguistic matters, including the "grammarians" of Late Antiquity, divided voice into *vox articulata*, the "articulate" voice of humans, and *vox confusa*, the "confused" or "inarticulate" sounds made by everything else, including animals.[13] (This division would exert considerable influence on medieval thought, including about music.)[14] *Vox* is sometimes used by itself for non-human "sound", although this usage is mostly poetical. More ordinary is the use of *vox* to mean "word", even when the word is written, which is why we still use the abbreviation *s.v.* (*sub voce*) to indicate where to find something in the dictionary.

The more general word for "word" was *verbum*, which ancient etymologists imaginatively although incorrectly connected to the verb *verberare*, "to beat", on the understanding that the air that mediates speech must "strike" the ear for hearing to happen. Much like sight (see *Sight and the Ancient Senses*), ancient understanding of how sound works often transforms it into a kind of contact and so assimilates it to touch. Suggestively, the English word "touch" itself derives not from Greek or Latin but, apparently, from an onomatopoeic word native to later Romance that sought to imitate the sound – *toc toc toc* – made by tapping on a hard surface. "To hear" in Latin is *audire*, cognate with *auris*, the word for "ear"; from the same root is *auscultare*, "to listen", that is, to hear, with attention. But the use of *accipere* to mean "to hear" is just as common; its basic meaning is "to receive" or "accept", suggesting the fundamental passivity, or at least, unavoidability, of an "act" of hearing.

Writing can only record linguistic sound, explain the Latin grammarians of Late Antiquity. But without batting an earlid, several of them then provide onomatopoeic lists that include things like the whinnying (*hinnitus*) of a horse, the bellowing (*mugitus*) of a bull, the roaring (*rugitus*) of wild beasts, the hissing (*sibilus*) of snakes, the croak (*coax*) of a frog, the clanging (*tinnitus*) of cymbals.[15] Also starring in such lists is birdsong, which throughout ancient thought troubles lines between humans and (other) animals, as well as between language and music. Consider the nightingales, whose music is described at length by the Roman natural historian Pliny.[16] They are not born with their song, he explains, but learn by imitating other birds and improvising their own individual repertoires, with which they then compete with one another in song contests, sometimes to the death. Bought and sold at

exorbitant prices by human collectors, they are trained to sing on command or to imitate the music of an organ. Humans in turn have endeavoured to build devices that could imitate their sweet notes. But all of this has a dark origin, according to others, including Ovid, whose story of Philomela is one of his cruellest.[17] Her tongue torn out by the brother-in-law who has raped her, she conspires with her sister to dismember and cook the rapist's son, Itys. Turned into nightingales, the sisters build their music from a mournful sound born of the slaughtered boy's name: *itu, itu.*

But are Pliny's nightingales the same species as Ovid's or ours? Scholars are not always sure, and sometimes these fanciful reports of their sounds are our closest ornithological guide: for all their anthropomorphism, these reports are crucial evidence of ancient biodiversity and the sonic ensemble it generated. Such matters take us close to recent work in sound ecology, which has attempted to map different acoustical environments and to calculate the relative distribution (human, animal, etc.) of their constitutive sound sources. More broadly, it connects us to ways in which scholars in sound studies have been framing, for a while now, the role of sound in mapping space and charting the affordances of cultural encounters.

R. Murray Schafer inaugurated the use of the term "soundscape" in his 1977 book, *The Tuning of the World*,[18] and invited the consideration of the world as a terrain of sounds that could be loud or quiet, euphonious or dissonant, raucous or hushed.

More recently, Dominic Pettman has offered a series of lessons on "how to listen to the world", including but not limited to its "ecological voice", to which he assigns the Latin name of *vox mundi.*[19] The work of Jacob Smith shows moreover how "eco-sonic media" could be used to gain an understanding of ecological place and even planetary space, widening the frame of how humans conceive their orientation to our changing environment and collective memory.[20] For hearing provides not just an ecological and spatial sense but also temporal framework for experience. Indeed, it has been suggested that what hearing hears is time, in as much as this sense amounts to recognition of measurements of different sonic frequencies.[21] At this granular level, hearing rhythms and tempos is an important way to organize information and memory, as we see from the tradition of metered poetry itself.

Ancient writers were no less concerned than modern theorists with mapping and theorizing their sonic environments and temporalities, as our very oldest poetry shows us.[22] Sometimes, of course, the forces they heard differ from those for which we now go listening. Odysseus, overhearing the voice of his desperate wife, asks Zeus for an omen. He promptly receives a thunderclap from the god. When he then overhears a maid praying that this thunderclap may foretell the death of the suitors, he takes her spontaneous

utterance too as an omen and is pleased.[23] Thus, in the hearing of voice, prayer, thunder and speech, an entire dialogue is played out among mortals and the divine. Each sound or speech is animated by the notion of an underlying significance to sounds, whether these sounds are ostensibly verbal or meteorological. The sounds act as omens, bearers of meaning in a system of fate and prophecy that is as great and unknowable as the music of the spheres. Sound can mark our place in the world (as both space and time), but it does not always guarantee our agency.

On the other side of the sonic spectrum is pure clamour, apparently meaningless sound against which the ancient listener might sometimes rebel. The philosopher Seneca, lodging over a busy bathhouse, describes a cacophony of noises he somehow manages to ignore: the grunting and clanking of men lifting weights, the pounding and cracking of the masseur, the hubbub when a petty thief is apprehended in flagrante, the splash made by oafs who leap into the pool, the screeches of sellers of depilatory services, outdone only by the screeches of those enduring the same, all permeated by the cries of the snack-vendors. But a far more serious problem, he explains to his correspondent, is the noise in his own thoughts: "What good does silence in our entire surroundings do us, if our feelings are in an uproar?"[24] In other words, where Plato used sound to configure the divine rationality of the cosmos, Seneca instead pits thought against the noisy irrationality of human emotion. Still, the careful reader catches a discordant irony in Seneca's account. Despite his claim to be able to ignore the sounds from the baths, he clearly has been listening to them. Indeed, his careful description of them is one of the most detailed to survive of any part of a real (we assume) Roman soundscape.

Dirt, as Mary Douglas observes, can be understood as matter that is out of place.[25] So too can "noise" be sound that finds its way into a place where its presence is unwanted, such as Seneca's apartment (or, to complete his metaphor, the philosopher's brain). At the same time, there are places where sound is not only expected but required in order for a place to enact its proper function: the marketplace, the assembly, the theatre. When sound or its absence fails to observe these boundaries, our sense of where we are may be disrupted, perhaps violently. (This, of course, is a common problem in urban environments today.)

But sometimes nothing is louder than silence. One December morning in 44 BCE, for example, the Roman populace awoke to find Cicero's severed head and hand on display on the speaker's platform from which he had so often addressed them. "A single day carried off the beauty of an entire age, and, grief-stricken, / the melancholy eloquence of the Latin tongue falls silent".[26] Even so, the young Petrarch, reading Cicero's surviving works fourteen centuries later, at the dawn of the Renaissance, would describe himself as

overwhelmed by the "sweet sonorousness" of the words on the page.[27] Petrarch, in other words, reminds us not only that ancient texts can be experienced as soundscapes, but that these may be received as a voice from the past, crying out for attention from the human (and humanist) present.

There is a spectrum of sound, then, that runs from harmonious melodies to clamorous commotion. Some of this sound we deem significant and strain to hear (the rhythms and other sound effects of poems, cosmic signs from the gods, sonic symptoms of disease in the body), and some we may try to block out or find ourselves unwittingly unable to hear (the bustle of the baths, the music of the spheres). Heard and unheard, sound surrounded the ancient Greeks and Romans, just as it surrounds us. This volume is intended to show a wide range of experiences and meanings elicited from that hubbub by our ancient counterparts. It also aims to explore ways in which we might turn our ears more profitably to the texts and other soundscapes they have left behind.

Sound, to be sure, has always been of interest to classicists. For example, Arthur Bernard Cook's "The Gong at Dodona" (1902), the oldest study of ancient sound in the present volume's bibliography, concerns the major Greek oracle at Dodona, where the will of Zeus was sought in sounds like the rustling of leaves in the sanctuary's sacred grove.[28] The same site has long featured in philosophical and theoretical encounters with sound. G. W. F. Hegel, for example, is thinking of Dodona when, in his *Lectures on the Philosophy of History*, he claims for "the Greek spirit" an intuition that forever "changes the *sensuous* into the *sensible*".[29] Roland Barthes reads the same sounds somewhat differently, hearing in Dodona's leaves "the rustle of language", in which linguistic meaning never fully escapes the matter from which it emerges.[30] A similar tension around oracular sound caught the imagination of Stephen Connor, whose *Dumbstruck: A Cultural History of Ventriloquism* includes a chapter on Delphi that deserves to be better known among classicists.[31] In a different strain of intellectual lineage, Aristotle's understanding of all perception as wax waiting to be moulded is at the core of the phenomenology of Maurice Merleau-Ponty, from which tradition Don Ihde frames the experience of sound in *Listening and Voice: Phenomenologies of Sound* (1976; second edition 2007). These theorists ask questions of how we shape the sounds of the world around us, and how we are wrought by them in turn.

Despite this inheritance of enquiry into sonic antiquity, it is only very recently that the study of ancient sound as such – neither reducible to linguistic code nor fully coterminous with ancient music – has emerged as a discrete area of investigation. Among the recent monographs to appear on this growing bookshelf are several by contributors to the present volume: Silvia Montiglio, *Silence in the Land of Logos* (2000), Timothy Power, *The Culture of*

Kitharôidia (2010), Sarah Nooter, *When Heroes Sing: Sophocles and the Shifting Soundscape of Tragedy* (2012) and *The Mortal Voice in the Tragedies of Aeschylus* (2017), Stephen Kidd, *Nonsense and Meaning in Ancient Greek Comedy* (2014), Shane Butler, *The Ancient Phonograph* (2015), Sean Gurd, *Dissonance: Auditory Aesthetics in Ancient Greece* (2016) and Pauline LeVen, *Music and Nature in Greek and Roman Myths* (forthcoming). Among other monographs by classicists, one may perhaps single out Nicole Loraux, *The Mourning Voice: An Essay on Greek Tragedy* (2002),[32] Thomas Habinek, *The World of Roman Song: From Ritualized Speech to Social Order*(2005), Maurizio Bettini, *Voci: Antropologia sonora del mondo antico* (2008), Guy Lachenaud, *Les Routes de la voix: l'Antiquité grecque et le mystère de la voix* (2013), and John Franklin, *Kinyras: The Divine Lyre* (2015). Sound and voice also feature prominently in the excavations of ancient materialist aesthetics by James I. Porter, including in *The Origins of Aesthetic Thought in Ancient Greece: Matter, Sensation, and Experience* (2010) and *The Sublime in Antiquity* (2016). Numerous books and articles by other scholars can be found in the bibliography. What seems clear is that scholarship in the present millennium is shaping a new disciplinary framework for thinking about sound in antiquity, as well as for using antiquity to think more broadly about sound.

A review of recent work in the larger field of sound studies would fill many pages and inevitably make many omissions, but the bibliography of this volume contains a representative sample of the work that scholars of antiquity may find useful. For the student encountering such work and its theoretical concerns for the first time, a convenient place to start is *The Sound Studies Reader* (2012), edited by Jonathan Sterne, whose own work has done much to shape the field. Similarly influential has been the work of French composer and writer Michel Chion.[33] John Mowitt's *Sounds: The Ambient Humanities* (2015) offers a self-reflective take on the discipline of sound studies within the field(s) of the humanities. Recent work on voice studies, a field closely related to but also distinct from sound studies, likewise cannot be summarized here, although two key texts with which to begin one's reading are Adriana Cavarero's *A più voci: Filosofia dell'espressione vocale* (2003), translated into English as *For More Than One Voice: Toward a Philosophy of Vocal Expression* (2005), which engages philosophers from Aristotle to Derrida, and Mladen Dolar's *A Voice and Nothing More* (2006), which derives its approach from Lacan but its title from Plutarch.[34]

As Cook explains in his 1902 study, the bronze vessels at Dodona, when struck or even just touched, rang so long and loud that to be a "gong of Dodona" became proverbial in Greek for someone who talks too much. Lest the editors be accused of being such, let us bring this overture to an end with a few brief notes about the sounds to come.

Programme

To guide this volume's listeners, we have divided its chapters into three sections, at the risk of simplifying the ways in which our contributors speak to one another, to shared themes and to theoretical interlocutors in sound and voice studies. (Parenthetical cross references will guide the reader who prefers to move more erratically and organically through the chapters.)

Part I, "Ancient soundscapes", comprises four exemplary but methodologically distinct attempts to conjure the lived experience of ancient hearers. Sound, as we have seen, provides an important way in which we map the spaces and temporalities through which we move. Timothy Power shows us in chapter 1 how certain sanctuary spaces would have been permeated and identified with noise of many kinds. Rituals were punctuated with significant sounds from prophetic voices, audible objects and the cries of worshippers. Loud sounds work in a dialectic with silence to reinforce the experience of disorientation and progression in the performance of mysteries and religious processions, whereas some gods were known by their capacity for noise. Divine presence was thus felt as sonic.

In chapter 2, Armand D'Angour plants us squarely in the symposium to strain to hear the sweetness of Greek song and to feel the emotions that the piercing *aulos* would have elicited by taking us through new and older evidence on Greek rhythms and melodic structures. Along the way, he provides a convenient snapshot of the state of the field for the reconstruction of ancient music. In chapter 3, Erika Holter, Susanne Muth and Sebastian Schwesinger take us to Rome, not to see the sights but to hear the sounds of orators in the Forum, noting how the changes in the "aural architecture" allowed for different levels of public and political communication. The authors' use of digital reimagining (with illustrations in the text and an audio reconstruction available on this book's companion website), allows us actual affective entry into this long-lost soundscape. Valerie Hope then brings us in chapter 4 to the path of a Roman funeral, with its sounds, songs and silences limning the spaces for grief and the vocal roles in society for the bereaved. Hope's chapter also tackles the complex question of how sound interacted with gender, which likewise constructed (and was constructed by) Roman senses of space and place.

Part II, "Theories of sound", reminds us of antiquity's own attempts to make sense of sound as such. The questions Stephen Kidd explores in chapter 5 through the philosophy of Aristotle remain contemporary: what kind of sense-making framework does sound require to be audible? Can there ever be *just* sound, or will our emotive frame always shape and create the sounds we hear? What, indeed, is sound for? No less fundamental are the theories offered by the

Greek world's first musicologists and acousticians, examined by Andrew Barker in chapter 6. Whereas Empedocles advances the idea that the work of sound happens through the activities of the ear, the Pythagoreans and Plato lead us to inquire further into the speed at which sound moves: how does speed affect (and effect) what sound is and at what pitch it hits its hearers? And how are the concords and dissonances of sound to be understood? How do we separate the impacts on the senses into units of sense?

Colin Webster shows ancient Greek healers seeking to understand the sounds of the body in chapter 7. As Webster demonstrates, both the symptoms of the sick body and the practice of expelling these symptoms function in an embodied soundscape that includes elaborate songs, like paeans, and inarticulate vocalizations, like shouts of pain. The hearing body and the perceiving ear are also at the centre of Pamela Zinn's reading of Lucretius in chapter 8. For Lucretius, sound is a collaborative event that occurs most potently between a body that produces voice (*vox*) and an organ of listening that plays its own active part. As Zinn demonstrates, a similarly collaborative transaction unfolds between the producing poet and discerning reader, according to Lucretius. A teleology thus unfolds that moves from sounds to voices, voices to language, language to poetry, and poetry to pleasure.

Part III, "Philology and sound", explores the sonic poetics on the spectrum between the sounds heard by listeners and those found by a reader on the page. When does linguistic meaning dissolve to let sounds themselves reverberate, and what is gained by letting poetic sound, even when only read, truly resound? We begin even before the beginning, as Joshua T. Katz explores the deep pre-history of Greek poetic sound in chapter 9. Tracing the patterns of vowel sounds found in religious utterances, he teases out resonances of sublime voicing in the proems of the four earliest Greek texts we possess. In chapter 10, Silvia Montiglio homes in on what is surely the most haunting and enigmatic vocal encounter in the Homeric epics: that of Odysseus with the deadly song of the Sirens. She then explores this song's resonance, between sound and sense, in later thought and literature, including Hellenistic epic, Ciceronian rhetoric, scholarship of the Renaissance and a twentieth-century short story.

In chapter 11, Sean Gurd offers detailed and imaginative explorations of certain sounds in the *Iliad* and the poems of Sappho, taking account of affective and materialist theories of language through the work of Brian Massumi, Roman Jakobson and James Porter. In exploring the borderlands between language and sound, he fruitfully culls the sonic and onomatopoeic gestures of his sources, pressing on the places where the sensory experience of hearing and the intellectual act of interpretation come in and out of alignment with one another. Sarah Nooter turns to the Greek stage in chapter 12,

examining the interplay of sounds and sense in passages from Aristophanes, Aeschylus and Sophocles, and focusing on places where language is drawn in to animalistic modes of expression or painful losses of language.

The last chapters of the volume think carefully about *how* we listen to the sounds of the written word. In chapter 13, Pauline LeVen invites us to hear through prisms of the senses as mapped in life by Michel de Certeau and in literature by Susan Stewart, as we turn an "erogenous ear" to a range of ancient texts, including works of Plato, Homer, Longus and Ovid. Here LeVen asks how different forms of hearing, as articulated by Michel Chion (and others), depend upon the act and agency of the person who listens. In the final chapter, Shane Butler gives extended attention to the aural poetics of the famous storm scene at the start of Vergil's *Aeneid* and of a single noisy line in particular. With insights from Julia Kristeva and Roland Barthes, as well as strategies borrowed from modern attempts to map sonic environments, he urges us to read in a way that blurs the line between word and world.

Sound, we may surmise, comes in numerous waves and modes; to hear sound is to accept its varying rhythms and volumes. In providing brief summaries of the sounds heard in this volume, the editors have hoped, like Apuleius at the start of his *Metamorphoses*, "to caress with a pleasant whisper the kindly ears" of our readers and to give a sense of what awaits in the pages to come.

1 Merleau-Ponty (1968: 130–5). See the introduction to *Touch and the Ancient Senses*.

2 Watkins (2011).

3 Cf. Augustine, *City of God* 16.6, *On Christian Teaching* 1.13.12 and *Confessions* 10.6.8. Thanks to Clifford Ando for this point.

4 Lacan (1978: 195). He specifies, it should be said, that this is true "in the field of the unconscious" and proceeds to observe, "Whereas *making oneself seen* is indicated by an arrow that really comes back towards the subject, *making oneself heard* goes towards the other".

5 Schafer (1977: 11), repeated in the excerpt republished in Sterne (2012: 102–3).

6 Homer, *Iliad* 1.46–52; 1.1.

7 Of the many retellings of the story, one may perhaps single out the extended account in Ovid, *Metamorphoses* 10.1–11.66.

8 Simonides, *Poetae melici Graeci* (ed. Page) 567; Horace, *Odes* 1.12.11–12.

9 www.moisasociety.org/de-musicis

10 Plato, *Timaeus* 47c–e. Cf. Plato, *Republic* 617b–c.

11 See Heller-Roazen (2011) for the afterlife of Pythagoras' apocryphal attempt at imposing harmonies.

12 Homer, *Iliad* 19.407–18, 18.419–20 and *Odyssey* 12.449, 10.136, 11.8, 12.150. For further delineations of these terms, see Ford (1992: 172–7), Lachenaud (2013: 37–44), Nooter (2017:

20–21) and Katz, this volume.

13 E.g. Donatus, *Ars grammatica maior*, in *Grammatici Latini* (ed. Keil) 4:367. Discussion in Butler (2015: 112–13).

14 For an accessible introduction, see Sullivan (2004).

15 References and discussion in Butler (2015: 113–15).

16 Pliny, *Natural History* 10.43.

17 Ovid, *Metamorphoses* 6.424–676.

18 Later published as *The Soundscape: Our Sonic Environment and the Tuning of the World*.

19 Pettman (2017).

20 Smith (2015).

21 See Turner and Pöppel (1983: 293–4).

22 In a different vein, the Roman writer Vitruvius offers instructions for the acoustical design of theatres in *On Architecture* 5.5.

23 Homer, *Odyssey* 20.92–121.

24 Seneca, *Epistles* 56.

25 Douglas (1984: 36).

26 Seneca the Elder, *Suasoriae* 6.26.

27 Petrarch, *Seniles* 16.1.1.

28 See Power, this volume.

29 Hegel (1857: 246–7).

30 Barthes (1986: 79).

31 Connor (2000: 47–74). Cf. also Connor (2014) on the voice.

32 First published in French in 1999, Loraux's study extends and expands Friedrich Nietzsche's famous work on unruly "Dionysian" sound.

33 Note especially the recent appearance in English of his *Sound: An Acoulogical Treatise* (2016), which translates the revised edition of a book that first appeared in 1998.

34 For cautions, however, about Dolar's Lacanian approach, see Butler (2015: 17–25), Pettman (2017: 43–9) and Butler (forthcoming).

Part I
Ancient soundscapes

1
The sound of the sacred

Timothy Power

Ancient Greek religion was strongly oriented towards activity rather than contemplation, outward displays of worship rather than inwardly felt devotion, and diverse ritual practices circumscribed by local cults rather than universal adherence to a unifying dogma.[1] Accordingly, it is natural that scholars should have to attend as much to its material, lived and experiential dimensions as to its structural, discursive and theological ones. Indeed, the recent turn towards the material and phenomenal in religious studies – the focus on the interactive ensemble of objects, impressions, appearances, corporeal habits, performances and practices, spatial and temporal contexts that produce meaning and value within religious cultures – is nothing essentially unfamiliar to students of Greek (and Roman) religion, whose research has long taken account of material things and embodied practices. It is only in recent years, however, that they have begun to articulate their materialist and phenomenological approaches with quite the same theoretical self-consciousness as peers in other disciplines.[2]

Sensation and sense perception, integral to such approaches, have hardly been neglected in studies of Greek religion. But there, as in other areas of religious studies, it is sight and image that are foregrounded, whether implicitly or explicitly, whereas hearing and sound have been relatively ignored. It is not uncommon to find acknowledgements of the "multisensory" nature of certain Greek festivals and rites: their heady mix of sights, sounds, smells and textures. But sonic practices and acoustic phenomena are generally treated superficially, descriptively, as mere adjutants to visual experience, and very rarely made the object of dedicated investigation. Music has of course drawn increasingly sophisticated attention from classicists over the past

twenty years or so, but, when discussed in conjunction with religious culture, the general tendency has been to treat *mousikē* discursively, structurally and functionally rather than situating it as a material presence within the lived acoustic experience of cult, as ritualized sound, which, alongside other, non-musical sounds, makes certain psychological and even physical impressions upon the worshippers who perform and listen to it.

Sound and vision

Ocularcentrism is foremost a symptom of the primary evidence. Greek religion is vividly attested by the archaeological and artistic record, and, in the obvious absence of sound recordings from antiquity, it is inevitable that scholarly investigations of religious life in early Greece – both its realia and its "imaginary" – tend to be visually focused, both in their means and ends. More broadly, we might situate this inclination to cast the gaze rather than lend an ear within the dominant visualist paradigm of the modern West, which accords epistemological and empirical privilege to the eyes over the ears and the other sense organs. Yet ancient Greek culture, despite its fundamental reliance on orality (and thus the aural), also exhibits a strong ocular bias, as Michael Squire takes care to explain in his introduction to *Sight and the Ancient Senses*. There is accordingly a pervasive tendency, much evident in the literary sources, to frame religious events and experience in predominantly visual terms.[3]

Three examples, drawn from prominent areas of Greek religious activity, will suffice to illustrate this tendency. First, there is the word *theōria*, used for a state delegation or pilgrimage to a cult centre. Although its precise etymology remains uncertain, *theōria* was clearly understood to belong to the register of sight: it indicated a viewing of a shrine and its attendant rites and festive spectacles, whether through a religiously concentrated "ritual-centered visuality"[4] or a more diffuse and aesthetic mode of "sacred sightseeing".[5] Euripides vividly evokes elements of both modes in a mythical scene of *theōria* in his tragedy *Ion*, when the awestruck Athenian women of the chorus, visiting Delphi for the first time, bid one another to gaze upon the wondrous images in Apollo's sanctuary, which "bring delight (*terpsis*) to [their] eyes" (232).

Secondly, there is the insistence on the primacy of vision, literal and metaphorical, in references to the initiatory rituals (*teletai*) of the Eleusinian mystery cult, which is demonstrated already in our earliest source for the cult, the *Homeric Hymn to Demeter*: "blessed (*olbios*) is the man who has beheld (*opōpen*)" the mystic revelations (480). The "blessed" had undergone the emotionally powerful visual experience of initiation, which apparently

involved a temporary veiling of the eyes followed by dramatic exposure to brilliant, quasi-epiphanic torchlight, among other moving and symbolically meaningful images. Thus changed from a figurative state of blindness to one of sight and enlightenment, they were called *epoptai*, "viewers", candidates for a subsequent, still more profound initiation called the *epopteia*, "viewing".[6] A third example is the frequent characterization in Greek texts of the *pompē*, the sacred procession that was the most elaborate collective performance in Hellenic religious culture, as above all a visual spectacle, a "viewing occasion".[7]

There can be no question that in these three cases vision did play a leading role, as it did in other areas of Greek religion. But if we read the sources with attention to the sonic references they contain (but that are often overlooked), we realize that, despite the visual bias evident in their descriptions and indeed in official cultic terminology itself, sound and hearing did make contributions to the holistic experience of these activities as significant as those made by image and sight.

First, soundmaking and audition, in ritually concentrated and more promiscuous forms, were present at virtually all stages of *theōriai*. The festivals that were often their destination points were complex soundscapes that fully engaged the ear of the visitor or pilgrim (*theōros*).[8] He or she heard musical performances of all kinds, utterances, outbursts and acclamations, the "buzzing noises" of crowds and the sounds of sacrifice made by animals, instruments and worshippers, including most strikingly the *ololugē*, the shrill cry women raised as the animal was killed, which Walter Burkert memorably called "life scream[ing] over death".[9] There were also cries for *euphēmia*, the ritual silence, or at least a heightened mood of vocalic and sonic restraint, which punctured the noise and allowed the propitious voices of priests or singers to carry more clearly to the gods.[10]

The oracular shrines visited by many *theōroi* must have been especially loud places, flush not only with bodies, but voices and noises. Even at the relatively minor oracle of Apollo Koropaios in Thessaly, administrators felt the need to pass measures ensuring the maintenance of *eukosmia* "good order", which probably included efforts at noise control.[11] Sound and listening were crucial to many forms of oracular consultation itself. Nowhere was this truer than at Zeus' oracular sanctuary at Dodona, the most sonorous prophetic site in ancient Greece, a place that could be called *omphēs meston* "full of divine voice" (Philostratus, *Imagines* 2.33). Odysseus went to Dodona "so that from the god's high-leafed oak tree he might hear (*epakousai*) the will of Zeus" (*Odyssey* 14.327–28 = 19.269–70). In some accounts, it was Zeus' "talking oak" that delivered prophecy (e.g. Plato, *Phaedrus* 275b–c), in others, twin doves perched in its branches (Sophocles, *Women of Trachis* 171–2). Another sonic wonder was the ring of contiguous bronze cauldrons surrounding the oracle.

When even one was touched, all the cauldrons would ring out continuously owing to the sympathetic vibrations (Demon *ap.* Stephanus of Byzantium s.v. *Dōdōnē*), thus creating an ambient "wall of sound" that must have permeated the entire sanctuary. It is unclear what role the cauldrons played in divination. Some late writers say that the harmonic drone induced an inspired trance state in the Dodonian priestess. But even if such claims are to be discounted, the ringing cauldrons must still have intensified the otherworldly aura of this place where mortals came to hear the very will of Zeus.[12]

But pilgrims were not merely passive auditors; they also made sounds, and we might say too they brought sounds with them, performing as musicians, chorus members and vocalizing officiants not only at the destination sanctuary, but on the theoric journey as well. Pausanias tells of a college of female devotees of Dionysus, the Thyiades, whose biennial *theōria* from Athens to Delphi followed a "songline": the women sounded out their sacred journey through the landscape with choral songs and dances at traditional stopping points along the route (*Description of Greece* 10.4.3).[13]

Turning to the evidence for the Eleusinian Mysteries, we note how the focus on visuality obscures, but does not totally eclipse, the important acoustic features of the *teletai*. Here psychologically manipulative chiaroscuros of sound and silence seem to have complemented those of light and darkness. Plutarch alludes to the "uproar and shouting (*thorubōi kai boēi*)" made by excited initiands as they approached the *telestērion*, where initiations were conducted; when the ritual programme began, however, they attended in utter "fear and silence (*siōpē*)" (*Progress in Virtue 81D-E*). But the atmosphere hardly remained silent. "The ritual action of the mysteries (*drōmena*)", Silvia Montiglio observes, "often relied on loud sounds precisely to arouse intense emotions". Such arousal was necessary for the cathartic "suffering" (*pathein*) that Aristotle said was the goal of mystical initiation at Eleusis (rather than *mathein* "learning").[14] The sources are predictably vague about what these sounds were, but we do hear of one specific and presumably deeply affecting noise: a bronze gong struck at what must have been a central moment of the rites, "when Kore was being summoned".[15]

It is clear too that the voice of the hierophant, the high priest conducting the ceremony, was crucial to the initiatory experience. The importance of his voice, however, may have lain not so much in its capacity for *logos* as in its sonorous, phatic and aesthetic aspects: voice as a sound effect conducive to *pathein* rather than *mathein*. The hierophant may at times have sung. The name of the prototypical hierophant of myth, Eumolpus, which means "skilled in song (*molpē*)", is suggestive in this respect. The elegiac epitaph of an Imperial-era hierophant commemorates his "pouring forth the charming voice (*himeroessan opa*) of Eumolpus", thus laying emphasis on the material and

affective dimensions of the hierophantic voice, and probably its musicality as well.[16] (The phrasing of the epitaph is also intriguing for its suggestion that present-day hierophants not only impersonated Eumolpus, but directly "channelled" his voice from the mythical past.) The hierophant also uttered non-musical cries and proclamations, whose sheer acoustic impact was as important as their referential function. During the climactic stage of the initiations, the hierophant emerged from the *anaktoron*, the sanctum of the *telestērion*, and announced at full volume ("he shouts and yells") the triumphant birth of Brimos, a now-obscure figure of the Eleusinian pantheon (Hippolytus, *Refutation of All Heresies* 5.8.40). Philostratus, writing in the third century CE, uses a remarkable metonymy, "the voices (*phōnai*) from the *anaktoron*", to describe the hierophantic tenure of the sophist Apollonius (*Lives of the Sophists* 600). Philostratus tellingly conceives the essence of the hierophant as voice alone, and it is worth noting that the word he uses, *phōnē*, like *opa* in the epitaph cited above, typically denotes bare, sensual vocal emission apart from *logos*.

Finally, recent studies have engaged with the full sensory spectrum of the sacred procession, what one scholar calls its "babble of voices, movement, music, colors, smells, and visual impressions".[17] Joan Connelly in particular has paid welcome attention to processional acoustics in her discussion of the grand *pompē* that travelled the Sacred Way from Athens to Eleusis for the celebration of the Mysteries.[18] Sound in fact defined this procession in ways both practically and conceptually fundamental. The ritualized exclamation of joy that had marked it from its origins, *iacchē!*, came to be articulated as an invocation, *Iakch', ō Iakche!*, of a tutelary deity, Iacchus. That is, the Eleusinian *pompē* was, at least by the Classical period, devoted to the divinized genius of its own collective soundmaking; this personification of ritualized sound was further reified in the mobile cult statue of Iacchus that led the *pompē*.[19] And so closely identified was sound with the spatial context of the Sacred Way that, during the Persian occupation of Athens in 480 BCE, when the procession and the Mysteries should have been celebrated but were not, reports were heard of a disembodied voice (*phōnē*) broadcasting "the mystic *iakchos*-cry" across the Attic countryside, as if an echoic, spectral *pompē* were defiantly moving through it (Herodotus, *Histories* 8.65; cf. Plutarch, *Themistocles* 15.1).

Most processions prominently featured musical performances, transforming spectators into listeners. A passage in Heliodorus' novel *Aethiopica* (3.1–3) suggests how musical and visual impressions could jostle for attention as a grand procession passed by, creating a kind of audiovisual overload. Calasiris narrates his experience witnessing a theoric *pompē* of Thessalians to Delphi, which prominently included girls singing a processional hymn and advancing in a choreographed pattern. "In their dancing", says Calasiris,

> there was such musical grace, and so rhythmically matched to the melody was the beat of their step, that one's eye was persuaded by what one heard (*akoē*) to slight what was seen, and those present followed only the girls as they went by, as if drawn on by the sound (*ēchō*) of their song. But then appeared a mounted troupe of ephebes and their brilliant commander, who showed the spectacle of their finery to be much greater than all that was heard (*akoē*)!

Thus could processional sound fascinate and involve the stationary observer, drawing him into the movement of the procession itself, until, at least, another amazing sight came along and stopped him in his notional tracks.

Sound in primary religious experience

In his seminal study of the phenomenology of sound, Don Ihde proposes that a "deliberate change of emphasis from the visual to the auditory dimension … symbolizes a hope to find material for a recovery of the richness of primary experience that is now forgotten or covered over in the too tightly interpreted visualist traditions".[20] I hope that the examples discussed above suggest how true Ihde's proposition can be for the study of early Greek religion, in whose "primary experience" the auditory was so definitional and multivalent a factor.

Sound worked to structure and texture ritual observance, communication and memory, and to stimulate desired emotional states and aesthetic responses in worshippers (and by extension the gods). It sacralized space and time, heightening, like the ringing cauldrons at Dodona, the sense of the numinous; it generated symbolic meanings that linked the material moment to a broader cultural imaginary. Like the voice of the Eleusinian hierophant, it could echo the mythical past in the here-and-now, and sustain the continuum between previous and current ritual events.

Sound created these effects in tandem with vision and the other senses. But sound could also operate independently, in ways vision could not, and thus leave unique impressions on social and religious experience. Unlike a static or even mobile image, it could pervade space and so reach members of large groups with an equal immediacy. (Indeed, sightlines at crowded religious events must often have been blocked or obscured.) Sounds could be heard at a distance, and could even be visually detached from sources or causes, thereby intimating the presence of invisible forces and producing effects suggestive of the supernatural and divine. Further, hearing, in contrast to active and intellective seeing, was generally considered the more passive sense, emotionally pliable, a conduit for psychagogic influences. For Plato's Socrates, the most effective way to reach the soul and so influence mood and character was through the ears (*Republic* 3.411a–c).[21]

To try to record here all, or even a fairly representative collection, of the

various acoustic practices and phenomena of Greek religion would result in a dense cacophony. Our evidence, lacunose though it is, for the complex cultic landscape of early Greece still includes far too many to catalogue, much less consider in any detail. In what follows, then, I take an approach that is highly selective, yet suggestive of broader tendencies and patterns: I examine one particularly conspicuous manifestation of sacred sound, the "cultic soundmark", and some acoustically related ideas and concepts connected to it.

The cultic soundmark

The *Homeric Hymn to Apollo*, like so many other poems preserved from Archaic Greece, is a textual remainder of a primary sacro-acoustic experience, having been recited, probably in the later sixth century BCE, at a major festival for Apollo on the sacred island of Delos.[22] Here we find Apollo searching the Greek mainland for a place to establish his temple and oracular shrine.[23] As the god travels through Boeotia, the *Hymn* pauses to describe a curious rite (*hosiē*) practiced at the town of Onchestus, in "Poseidon's splendid grove (*alsos*)". Approaching this sacred precinct, a driver is to leap from his chariot, leaving the horses, which include at least one recently broken colt, to "rattle (*kroteousi*) the empty car" through the trees of the grove. If the horses crash the chariot, the driver is to pray to Poseidon and prop the chariot up in the grove as an offering to the god. Here is the passage in full:

> You reached Onchestus, Poseidon's splendid grove, where the new-tamed colt draws a breath, burdened as it is by drawing the fine chariot, and onto the ground the driver, though good, leaps from the chariot and goes on his way. Meanwhile, the horses rattle (*kroteousi*) the empty car, having gotten rid of their lordship. If the horses crash the chariot in the wooded grove, they continue to take care of the horses, but they leave the chariot propped up. For thus was the rite (*hosiē*) from the beginning. And they pray to the lord, but the god's portion then guards the chariot.
>
> (230–8)

The meaning of the ritual described in this passage remains uncertain. Some have understood a divinatory method to be implied, others the *aition* for a chariot race, others a trial of a colt's training under the watch of Poseidon, god of horses, who must consent to the release of the animal from the untamed, natural realm into the cultured world of the yoke.[24] But whatever the rite's purpose or meaning, what concerns us here is the rattling, the clatter and clash (*kroteousi*) made by the horses as they pull the empty, unballasted chariot at speed through the grove: a clattering followed, at least on occasion, by the spooked horses' crashing the chariot into the trees.

This noise, loudly signalling danger and disaster, and abnormal in any

context save the chaos of battle (cf. *Iliad* 11.160, 15.453), would have been amplified against the relatively quiet backdrop of the Boeotian countryside. Furthermore, it would have sounded especially discordant and jarring in a sacred precinct, and a sacred grove (*alsos*) at that, where cart and horse traffic was typically forbidden and its profane noise unwelcome.[25] The *alsos* was traditionally a space of sonic decorum, a *locus amoenus* suffused with soft, ambient sounds of nature. Thus, in the "graceful *alsos*" of Aphrodite evoked in Sappho, fragment 2, streams of cold water resound through apple-tree branches, leaves shimmer sleepily in the breeze, and these mellow sound impressions harmonize with the festivities delicately (*habrōs*) celebrated by worshippers.[26] The *Hymn to Apollo* itself acknowledges the normative quiet of the sacred grove: not long after leaving Onchestus and its noise, Apollo reaches a "tranquil place" (*apēmōn chōros*, 244–5), which seems to the god a suitable site for his own temple and *alsos*.

Yet the rattle of driverless chariots clearly belongs to Poseidon's grove and its sacred rite; it is, despite its apparent inauspiciousness, sacred sound. What is more, I would propose that it served as the signature *soundmark* of this local cult at Onchestus. "Soundmark" is a term and concept introduced by R. Murray Schafer in his now-classic book on the soundscape.[27] As he would later explain it:

> In the soundscape too, there are sounds that obtrude over the acoustic horizon. We call these soundmarks and we can define soundmarks as prominent sounds possessing properties of uniqueness, symbolic power, or other qualities that make them especially conspicuous or respectfully regarded.[28]

In the ancient Greek cultic context, we might designate a soundmark any emotionally and symbolically charged sonic marker, usually extraordinary or even wondrous in nature, that is distinctive to a cult's local and/or material expression, be it in features of the natural landscape, manmade structures, ritual practices or some combination thereof. Soundmarks were heard as real auditory phenomena, integral to primary, on-site cult experience, inspiring in worshippers fascination and awe as well as a sense of involvement in a numinous moment. But they secondarily became part of the *kleos*, the storied renown, of the cult, its identity as represented in myth, legend and popular imagination.[29]

Both aspects are implicit in another sonically attuned reference to Poseidon's cult later in the *Hymn*. After Apollo leaves Onchestus and makes his way several miles northwest, he comes to Haliartus and the spring of Telphousa, which seems to him just the "tranquil place" suitable for his shrine. The spring's eponymous nymph dissuades him, however, claiming that the place is not quiet at all, but rather quite loud:

> Always the din (*ktupos*) of swift horses will disturb you, and the mules drinking water from my holy springs. Here everybody will want to gaze at (*eisoraasthai*) the well-made chariots and the din (*ktupos*) of swift-footed horses rather than your great shrine and the many possessions within.
>
> (262–6)

Telphousa advises Apollo instead to build "at Crisa, under the folds of Parnassus, where neither fine chariots will noisily shake you (*donēsetai*) nor the din (*ktupos*) of swift-footed horses around your well-built altar" (269–71). The nymph's warning about "noise pollution" is usually understood to refer to traffic along the road by the spring. This may in part be true, but we should not miss in her words an unmistakable reference to the soundmark of the cult at nearby Onchestus, which would, as Telphousa insinuates, present direct competition with Apollo's own cult.[30] Her repeated emphasis on the din of horses – *ktupos* may describe the loud, percussive "crash" of battle or thunderclap as well as the rush of hooves, and here it recalls *kroteousi* – with their fine chariots (and no mention of drivers) points not towards the mundane highway, but the noisy rite in the *alsos* of Poseidon.[31]

It is there that "everybody will want to gaze at" not only the finely wrought chariots, but also, and paradoxically it would seem, the din raised by the horses. Elsewhere in early Greek poetry, a verb of seeing may simultaneously take objects of sight and hearing, usually in contexts of synaesthetic confusion, especially battle.[32] Telphousa's audiovisual zeugma, however, throws a marked accent on the auditory object. The verb *eisoraasthai* in Homeric poetry denotes a concentrated mode of viewing, not infrequently expressive of religious awe at a marvel or perceived divine revelation (e.g. *Odyssey* 3.246, 6.142). Nowhere else does it describe audition. Here, then, it attributes a virtual materiality to the sacred sound at Onchestus, a vividness that inspires admiration and attracts a ritually heightened "auditory gaze" rivalling the ocular gaze drawn by the fine chariots.

Furthermore, Telphousa implies, the fascination exerted by this soundmark will threaten to distract from the *kleos* of Apollo's "great shrine" with its visually splendid dedications. And to some extent Telphousa is right: the signature sound of Poseidon's local Boeotian cult continues to resound in a hymn celebrating the foundation of Apollo's great Panhellenic cult at Delphi. We may hear its echo too in an epithet appearing in a scene from the *Homeric Hymn to Hermes* that distinctly recalls the Onchestus episode in the *Hymn to Apollo*. Searching now in Boeotia for the cattle stolen from him by Hermes, Apollo again arrives at "Onchestus, the very lovely, holy grove of the loud-roaring (*erispharagos*) Earth-holder" (186–7). Only here in Greek poetry is *erispharagos* applied to Poseidon. Elsewhere it describes Zeus, and we may suspect its application to Poseidon is prompted by the adjacent mention of the

grove. Perhaps the epithet had currency within Onchestan cult itself. We may compare the variant *eriktupos* used (only) of Poseidon in the Hesiodic *Theogony* (441, 456, 930), a poem whose origins are notably Boeotian.[33]

Sonic personae and iconic soundmarks

Whatever their original relation to the Boeotian cultic landscape may have been, these epithets certainly reflect a dominant conceptualization of Poseidon within the broader auditory imagination of ancient Greece, a conceptualization we may term his sonic persona: Poseidon's identification with sea storms, earthquakes and horses naturally personifies him as noisy, and indeed the noises associated with those forces could be heard as literally produced by Poseidon.[34] Similar is the case of the thundering sky-god Zeus, with whom Poseidon shares some epithets indicating the production of elementally sublime noises.

But a deity's sonic persona could also amplify more profound and less perceptible ideas underlying his or her material attributes and activities. An example of this comes by way of Dionysus' common epithet *Bromios*, which personifies the god as rumbling, deeply resonant noise, a diffuse and permeant roaring.[35] The epithet was thought related to both myth and ritual. It could recall the roar of Zeus' thunderous epiphany that blasted the body of his mother Semele (Diodorus Siculus 4.5; *brontē*, "thunder", is cognate with *Bromios*), or the loud revels, throbbing with low-pitched drums and droning pipes, which poets often imagine Dionysus leading (e.g. Euripides, *Bacchae* 151–61) and which on occasion his mortal worshippers also undertook.[36] But the Bromian roar, a viscerally overwhelming "surround sound", serves too as acoustic metaphor for more essential Dionysian themes: exuberance and profusion, the "unruly intrusion of the other" (to borrow an apt phrase Douglas Kahn applies to noise itself), sensual derangement and mania.[37]

Another case in point is the Homeric epithet of Artemis, *keladeinē*, "resounding". A scholion to *Iliad* 16.183 reasonably explains this epithet as referring to the sounds of two activities characteristic of Artemis and her devotees: hunting, with its loud calls (*ekboēseis*), and *choreia*, choral song and dance. It may evoke too, however, the fundamental liminality of Artemis, her medial position between wild nature and culture.[38] In Homeric poetry, *kelados* and its derivatives straddle both realms, describing the sound of natural phenomena (water and wind, the rustle of glades) as well as voices in human society, but always voices in their inarticulate aspect, as noise – acclamations and shouts (e.g. *Iliad* 9.547) that resemble nature's sounds – rather than as culturally intelligible *logos*. These words are applied to musical performance,

often choral, as early as the fifth century, but even then emphasis almost always falls on the purely expressive and dynamic aspect of the singing voice (e.g. Pindar, fragment 52e.46–8 S-M).[39]

In some cases, at least, the cultic soundmark iconicized the sonic persona of the god at the cult's centre. This would seem to have been the case at Onchestus. Richard Martin has observed how the Onchestan rite plays out a quintessentially Poseidonian tension between human culture and technology, emblematized by the finely crafted yet vulnerable chariot, and the superhuman natural energies represented by Poseidon and the horses. After the driver leaps to the ground, the chariot leaves the cultured realm of horsemanship – the drivers' "lordship", as the *Hymn* has it (234) – and becomes subject to its horses, potentially wild, destructive forces now controlled by lord Poseidon alone. For Martin, the ritual gives audible expression to this underlying regression from culture to nature and shift from human to divine: "The verb *kroteousi* has the sense of hitting … as if the horses are aggressively trying to lose the last vestige of the human culture that has been attached to them".[40] To what extent cultic participants at Onchestus intellectually appreciated the "structuralist" implications of the soundmark we do not know. What is easier to imagine is its visceral impact. Although not quite a direct auditory epiphany, it conceivably included a revelatory dimension. Hearing the elemental turbulence of Poseidon's sonic persona manifest in the violent clatter consuming the chariot, those in the grove may well have felt themselves in the presence of the god's awesome power to destroy or save.[41]

The second-century CE travel writer Pausanias, who was mostly interested in the visual peculiarities of local cults, but could not help noting their extraordinary sonic features as well, records another iconic soundmark connected to Poseidon, this one more explicitly epiphanic in nature. In the Erechtheum on the Athenian Acropolis, where Poseidon was honoured, there was a cistern filled with seawater: something that was not a *thauma*, "wonder", in itself. "But this cistern", writes Pausanias, "is remarkable for the sound (*ēchos*) of waves it sends forth when a south wind blows. On the rock is the outline of a trident. Legend says that these appeared as evidence in support of Poseidon's claim to the land" (1.26.5; trans. Jones 1918). This soundmark, with its accompanying visual signature, the trident, echoes a central myth of Athens' foundation, the contest between Athena and Poseidon for patronage of the city, the former offering the cultivated olive tree as a gift, the latter a horse and seawater (Apollodorus, *Library* 3.14.1–2; Herodotus, *Histories* 8.55). Athena won the day, but Poseidon continued to reverberate across the cultured precincts of the Acropolis from his subsidiary cult in the Erechtheum, the uncanny sound of waves, an irruption of otherwise repressed archaic energies, signalling the persistence of his hold on Athens.

Pausanias describes the analogous case of a cult to the river god Cephisus in Argos. "They say", according to Pausanias – as with Poseidon's cult in Athens, this wondrous soundmark is a legendary feature of the Argive cult's repute – "that the water of this river was not completely hidden away (*aphanisthēnai*) by Poseidon, but that right there, where the sanctuary is, they hear it flowing under the earth" (2.20.6). Here too the soundmark resonates against an aetiological myth relevant to the broader geographical setting of the cult – Poseidon obliterated the river because Cephisus judged that the Argolid belonged to Hera – even as it preserves the epiphanic trace of a divine presence that was suppressed in the mythical past. Cephisus, although invisible, continues in the present day to reveal himself sonically to visitors at his sanctuary.

Women's cultic soundmaking

In narrating his tour of the religious sights in Argos, Pausanias registers an interesting acoustic juxtaposition between the sanctuary of Cephisus, with its spectral, subterranean sound, and the building right next to it, in which "the Argive women bewail Adonis" (2.20.6). Such dynamic contrasts between differing "acoustic profiles" of adjacent sanctuaries and structures must have been a familiar feature of the crowded urban cultic landscape. Audibly conspicuous in any city that hosted his cult were the lamentations for Adonis performed by women at festivals commemorating his untimely death. The soundmaking at these events was loud and emotionally unrestrained, as women imitated Aphrodite's dirges over Adonis (cf. Sappho, fragment 140), re-sounding, as it were, the affective intensity of the goddess's voice through their ritual mimesis of myth.

Unsurprisingly, some male citizens heard this sacred sound as unruly, inauspicious clamour.[42] At Argos, at least in Pausanias' time, women were collectively confined to one building to lament Adonis – perhaps better to contain their ritual "noise" – but in Classical Athens the custom was for smaller groups of women to observe Adonis festivals on the rooftops of private homes, thereby broadcasting their laments more diffusely, or, in the view of some, more intrusively across the city. The government official in Aristophanes' *Lysistrata* complains that Adonian noise, transgressing the boundaries of cult, so profoundly disrupts men's civic activity that, several years before, the Assembly, disconcerted by the wafting cries of "Woe for Adonis!", consented to the doomed Sicilian expedition that almost ruined Athens (387–98).

Aristophanes' official tellingly conflates the disruptive Adonis lamentations

with "drum-playing and thick cries of 'Sabazios!'" Although surely not the undifferentiated sonic assault the official evokes, women's ritual performance, primarily in the largely female "foreign" cults devoted to Adonis, Sabazios, Bacchus and Cybele, but also in the domestic cults of Demeter, Pan and Aphrodite, could be notably loud, marked by passionate vocalizations at the outer edges of melody and the frenzied beating of frame drums (*tumpana*) and bronze cymbals. This was music, but music sonically alien to the more melodically defined, formally structured and expressively muted norms of Greek *mousikē* (cf. Strabo, *Geography* 10.3.10–18). At the beginning of the *Lysistrata*, the title character imagines Athens swarming with women on their way to a festival of Bacchus, Pan or Aphrodite; "You couldn't get through them, what with all the *tumpana*", she says (1–4). The image suggests a city infested with women's ritual noise: a male poet's exaggeration, to be sure, but probably a reasonable reflection of the outsized acoustic impact made by certain female-dominant cults.[43]

What the acoustic experience of the women *within* these cults was actually like is hard to know, since our sources are virtually all (male) outsiders. We can, however, assume that their percussive, repetitious and high-decibel soundmaking served, as cross-cultural evidence suggests,[44] to bond the worshipping group closely together in body and soul, deepening emotional and perceptual sympathies between members and heightening collective feelings of euphoria, ecstasy or trance, catharsis and enthusiasm.[45] And especially in *poleis* such as Athens, where women had few opportunities to make themselves heard through traditional modes of public speech and music, it may also have offered a certain freedom of expression.

Performative soundmarks

Though aurally striking, the ritual lament for Adonis lacks the distinctiveness of a cultic soundmark as I have defined it above. Like the Apollonian paean or Dionysian dithyramb, its generic form made its sonic expression trans-local and trans-cultic. Yet an extraordinary vocal or musical performance tradition closely identified with a specific local cult could constitute a soundmark. We have already encountered one example of this, the Iacchus-cry that marked the procession from Athens to Eleusis. Discussion of two further examples, both involving women's performance, will bring this chapter to a close.

In his fragment 130b, the lyric poet and aristocratic partisan Alcaeus bemoans his exile from the strife-torn city of Mytilene in the late seventh century BCE. Occupying a rustic locale on the island of Lesbos, he "longs to hear (*akousai*) the assembly being called, and the council" (3–5), that is, the

sounds of men's civic activity. Instead, as the poem's final two preserved stanzas relate, the voices he hears emanate from "a sanctuary of the blessed gods" (13),

> where the Lesbian women, judged for their beauty, go in their trailing robes, and round about resonates (*bremei*) the marvellous sound (*achō thespesia*) of women's sacred yearly *ololugē*.
>
> (17–20)

It is usually thought that this "beauty contest" was part of a festival for Hera called the Kallisteia, which an Iliadic scholion tells us was held in her sacred precinct on Lesbos, presumably at the sanctuary she held in common with Zeus and Dionysus roughly in the middle of the island, at a site called Messon. Alcaeus seems to allude to this joint sanctuary in line 28; he describes it in greater detail in another poem (129.1–8).[46] This sanctuary and the Kallisteia festival are probably the implicit setting too of a choral performance for Hera led by Alcaeus' contemporary, Sappho, which is imagined in an epigram of the Hellenistic period (*Greek Anthology* 9.189). Furthermore, fragment 17 of Sappho, which has been augmented by recent papyrus discoveries, appears also to describe ritualized choral performances by "a group of girls and women" (17.11–14) at Messon.[47]

The "marvellous sound of women's sacred yearly *ololugē*" that Alcaeus hears at the sanctuary is likely also to be connected to choral performance at Messon. It may have been simply one great collective ululation by the gathered women, or perhaps *ololugē* stands by metonymy for a more elaborate choral song (or songs), in which ululation formed a prominent element such as a refrain. Although the *ololugē* was common in ritual contexts of different sorts, including sacrifice, birth and weddings (Sappho, fragment 44.31), the one described by Alcaeus seems to have been extraordinary: a cultic soundmark. It is distinguished by two epithets, one emphasizing the sacred status of the vocalization itself, the other its role as an audible marker of sacred time, the annually recurring cult festival for Hera.[48] And its numinous, awe-inducing effect on its auditors is clearly stated: the sound of this *ololugē* is *thespesia*, marvellous, sublime or, more literally, divine sounding.[49]

Anne Carson detects a deliberate contrast in the poem between the soundworld of the city, "with the urbane and orderly sound of a herald summoning male citizens to their rational civic business", and the "otherworldly echo of women shrieking". Alcaeus' "exposure" to the *ololugē*, she argues, is a negative "condition of his political nakedness" as an exile.[50] As we saw in the discussion of the *Lysistrata* passage above, men's civic and women's ritual sound could be considered incompatible, and there is no question that Alcaeus is using the ideological differentiation between these

soundworlds to articulate his own position. But we need not read the negative implications into Alcaeus' "exposure" to the *ololugē* that Carson would. A more positive reading of that sound is possible, which involves taking Alcaeus as an active rather than a passive listener, and probably one more directly engaged in the cultic festival.

Alcaeus speaks as if he has become a "dweller" in the sanctuary, where he "keeps his feet out of troubles"; that is, while exiled in Messon's politically neutral sacred space he finds relief from the war and strife of Mytilene (130b.16; cf. 11).[51] Rather than symbolizing his utter alienation, then, his listening to the wordless choral *ololugē* marks his participation in a firmer, purer, more authoritative and sacred order, one that transcends men's civic affairs, which are, as it stands, hardly "urbane and orderly". As much as Alcaeus longs to hear the sounds of the city, it is against the sound of Hera's cult that he makes his own prayer to the Olympian gods for salvation (it would seem) in the largely lost final stanza. The cultic soundmark – beautiful (like the women themselves, in their finery), consistent, concerted, resonating beyond temporal concerns – does not demoralize Alcaeus; rather, at the risk of resorting to "spiritual" clichés, we may say it is life affirming, renewing, an inspirational soundtrack for Alcaeus' eventual "comeback".

Our last example brings us back to the *Homeric Hymn to Apollo*, this time to the conclusion of the first, "Delian" section of the poem, where the grand festival for Apollo on his sacred island of Delos is described. The festival draws together all the Ionian Greeks, who honour Delian Apollo with the splendour of their raiment, ships and possessions, and strive to impress him with contests in "boxing, dancing and song" (146–55). But the highlight of the festival is a performance by the chorus of Delian Maidens:

> To top it off there is this great wonder (*thauma*), whose fame (*kleos*) will never perish: the Delian Maidens (*kourai Deliades*), servants of the Far-shooter, who, after first they hymn Apollo, then in turn Leto and arrow-shedding Artemis, take thought of men and women of old and sing their song, and they enchant (*thelgousi*) the hosts of people. They know how to represent (*mimeisthai*) the voices (*phōnas*) and rhythmic patterns (*krembaliastun*) of all peoples; each person might say that it was he himself uttering voice, so well fitted together (*sunarēren*) is their song (*aoidē*).
>
> (156–64)

The chorus of Delian Maidens serves as a sonic beacon of sorts, transmitting out from Delos – their singing is so wondrous as to win immortal *kleos* throughout Greece (cf. lines 174–6) – and drawing auditors inwards.[52] At the cult site itself, Anastasia-Erasmia Peponi remarks, "this local chorus acts as the centripetal ritual force capable of creating a common responsiveness for all the different visitors".[53] The Maidens enchant the various festival-goers not,

significantly, by the words of their impeccably constructed song so much as the sheer sonic virtuosity of its mimetic representations: it has the perfection of an acoustic mirror. Each individual hears projected in it the sound of his own voice, *phōnē* (and the rhythmic patterns, *krembaliastus*, of his local musical traditions), as if "it was he himself uttering voice".[54] For Peponi, the Delians' choral song involves an auditory "aesthetics of empathy": "the choral performers achieve a holistic representation of the audience; in turn, the enchanted audience empathizes to such a degree that they attend as virtual performers".[55]

In its power to inspire fascination and wonder in worshippers and to synchronize their cognitive and affective faculties in the collective experience of ritual, the song of the Delian Maidens is a cultic soundmark *par excellence*. An exquisitely balanced and integrative acoustic artefact, it is also an ideal counterpart to Apollo's harmonious sonic persona, which otherwise finds iconic expression in the concordantly tuned lyre whose music brings order, unity and mutual delight into the world. The Delians' song indeed finds a divine echo several lines later in the *Hymn* (186–206), when Apollo arrives on Mt. Olympus with his lyre, to lead the Muses and a host of gods in choral song and dance: an image of sacred sound at its most perfect.[56]

1 See Price (1999: 3); Versnel (2011: 544–45).

2 See, for example, Raja and Rüpke (2015); Grand-Clément (2015); Kowalzig (2013); Petridou (2013); Kindt (2012); Brulé (2012); Kurke (2012); Platt (2011); Chaniotis (2006). Useful surveys of the material/sensory/phenomenological turn in religious studies are Hazard (2013); Promey (2014); Plate (2015); Morgan (2015).

3 On the ancient Greek roots of visualism, see, in addition to Squire (2016), Ihde (2007: 5–15); cf. Morales (2004: 8–9).

4 Elsner (2007: 25).

5 Rutherford (2000b: 135). On *theōria* more generally, see Squire (2016: 13).

6 See Petridou (2013) for visuality at Eleusis. For reconstructions of telestic experience, with sources, see Clinton (2004) and Bremmer (2014: 1–20).

7 Kavoulaki (1999: 294). Cf. Hope, this volume, on sound in funeral processions in Rome.

8 Cf. Nightingale (2004: 46): "the traditional *theōros* uses both his eyes and his ears".

9 Burkert (1985: 56). For the *theōros* as music listener, see Plato, *Laws* 12.953a (cf. *Republic* 5.475d, with Nightingale 2004: 46); ritual acclamations: Chaniotis (2009); "buzzing noises": Dignas (2007: 165). Theocritus' *Idyll* 15 vividly evokes the ambient sounds of a crowded festival. See also Bradley (2014: 198–9).

10 For a detailed survey of the ancient Greek festival, with an eye (and ear) for sense experience, see Chaniotis (2011). *Euphēmia*: Stehle (2004: 125–30); Gödde (2011). Montiglio (2000: 14–15) notes the sonic contrast between high-volume calls for *euphēmia* and the quiet they enjoined.

11 *IG* IX 2, 1109, 1.16–17. Cf. Casson (1974: 369): "Much unseemly shouting and shoving must

have gone on to induce the authorities to adopt such measures".

12 See Cook (1902) and Johnston (2008: 60–72) for the many different accounts of the arrangement and purpose of the Dodonian cauldrons. For the noise of bronze in ritual, cf. n. 15.

13 "Songlines" is the evocative name used by Bruce Chatwin for the ancestral "Dreaming-tracks" ritually travelled (and made resonant) by Australian Aboriginal peoples (1987); cf. Norris and Harney (2014). For other examples of Greek theoric performance *en route*, see Rutherford (2004: 72).

14 Montiglio (2000: 29–30); cf. Bérard (1974: 93, 96–7). Aristotle, fragment 15 Rose; cf. Plutarch, fragment 178 for Eleusinian *pathos* (with mention of "voices … and sacred sounds").

15 Apollodorus, *FGrH* 244 F 110b. Demeter was said to have beaten bronze cymbals in her search for Kore, a noise probably retrojected into myth from its use in her cult; Pindar gives her the epithet *chalkokrotos* "bronze-clashing" (*Isthmian* 7.3). But the sound of bronze, which was thought to have apotropaic and purifying powers, is well attested across various cultic contexts. See Cook (1902), Villing (2002).

16 *IG* II^2 3639.4 = *I. Eleusis* 515.4 (cf. *IG* II^2 3811.4 = *I. Eleusis* 637.4). In Archaic Theognidean elegy, the phrase *himeroessan opa* describes the sound of *auloi* (532), the reed pipes known for their deeply resonant and moving tone. Aristotle says that *auloi* aim at emotional *katharsis* rather than instruction or learning, *mathēsis* (*Politics* 1341a.23–4), the same formulation he uses of telestic experience at Eleusis.

17 Stavrianopoulou (2015: 355).

18 Connelly (2011: 320), with further comments on sound in 316–19. Cf. Mylonopoulos (2006: 103–9), and relevant remarks in Fisher (2014: 245–6).

19 Iacchus and cry: Versnel (1972); Graf (1974: 40–59); cf. Ford (2011: 345–7).

20 Ihde (2007: 13).

21 Cf. Montiglio (2000: 29–30). Socrates is talking specifically about music's effects (see Pelosi 2010 for Plato's views on the ethical and indeed somatic impact of musical sound), but the thought is clearly applicable to acoustic perception (*akoē*) in general, as *Timaeus* 67a–c shows.

22 Burkert (1979).

23 For the *Hymn* as a major element in the larger sensory web of Apollo's Delian festival, see Grand-Clément (2015), who discusses too the verbal evocation within the hymnic text of the soundscapes of the Delian and Delphic sanctuaries.

24 Schachter (1976) and Teffeteller (2001) review opinions. Chariot races are attested for a festival of Poseidon at Onchestus (Pindar, *Isthmian* 1.32–5, 52–4), but Richardson (2010: 117) is right to point out that wooded groves are no place for races, and what is described in the *Hymn* is not explicitly competitive. Perhaps the rite was performed as a sort of prelude to a chariot race, however. A recent analysis understands it as a "crash test" meant to prove the mettle of the technical construction of chariots: Martin (2010).

25 Prohibitions on traffic: Sokolowski (1960). For the sanctuary precinct (*temenos*) as a space removed from profane sense experience, see Grand-Clément (2015: 115–16).

26 Theocritus, *Idyll* 7.131–57 offers a similar description. Bonnechere (2007: 29–30) discusses the low-volume repose of groves. See Gurd in this volume for a close reading of the sonic

properties of the Sappho poem.

27 Schafer (1977).

28 Schafer (2005).

29 For *kleos* "fame, renown" as itself a fundamentally acoustic concept, see Svenbro (1993: 14–15): "*kleos* belongs entirely to the world of sounds".

30 The site of Telphousa near Haliartus would historically have belonged to the catchment area (the "here" in line 264) of Poseidon's cult at Onchestus. The cult sanctuary was controlled by Haliartus beginning in the fifth century BCE, and would later become the centre of the Boeotian League: Roesch (1982: 266–77); cf. Palaima (2009).

31 At Aristophanes, *Knights* 552, Poseidon delights in the "din of bronze-clattering horses" (*chalkokrotōn hippōn ktupos*); cf. Sophocles, *Electra* 714 for the "din of rattling chariots" (*ktupou krotētōn harmatōn*). See below on Poseidon's epithet *eriktupos*.

32 E.g. *Odyssey* 9.166–7; Aeschylus, *Seven Against Thebes* 104, on which see Marinis (2012), with wider discussion of "visible sound" in Greek literature. Cf. Wille (2001: 129, 78–80).

33 This epithet does not appear in Homeric epic, nor does the variant *baruktupos* "deep crashing", used of both Poseidon and Zeus in the *Theogony* (818, 388).

34 For a different application of "sonic persona", see Schulze (2014).

35 See Chantraine (1968: 194) for the semantics of *brem-*/*brom-* words, which tend, in earlier Greek poetry, at least, to describe amorphous, lower-frequency sounds ("grondement sourd de la mer, du vent, etc.").

36 Cf. Lavecchia (2013: 61). As *Bromios* evokes the sublime roar of Zeus, so his epiphany may also be accompanied by a Poseidonian rumble of earthquake (Euripides, *Bacchae* 585–95). But the Dionysian sonic persona is less alienating than the terrifying sonorities of Zeus and Poseidon.

37 Kahn (1999: 22).

38 Artemisian liminality: Vernant (1991: 195–206); cf. Parker (2011: 91).

39 Cf. Due (1965: 2–3); Carson (1995: 125–6); Kennell (1995: 52); Vergados (2013: 308).

40 Martin (2010).

41 For Poseidon's essential "turbulence", see Parker (2011: 90); cf. Burkert (1985: 139). Poseidon did make an auditory epiphany at Onchestus: when Alexander the Great attacked Thebes, it was said that the marsh at Onchestus "gave forth a frightening and continuous noise like the bellowing of a bull" (Aelian, *Historical Miscellany* 12.57). Such epiphanic sonic portents are better attested in Roman than Greek religion, however. See Beard (2012).

42 For Adonia, see Reitzammer (2008, 318–26 on ritual lamentation); cf. Simms (1998). It is worth noting that women's funerary lament was restricted by formal legislation in several *poleis,* including Athens (Plutarch, *Solon* 21.6), for reasons at least in part related to the gendered politics of sound: the intensity of women's wailing was thought capable of upsetting civic order. See Humphreys (1983), Holst-Warhaft (1992: 114–19).

43 Men of course made notably loud sacred sounds of their own. A non-musical example is offered by the same passage of the *Lysistrata* in which the official complains of women's noise pollution in the Assembly: Demostratus, the politician arguing for the Sicilian expedition, was forced to compete with the mounting cries of his own wife, who was

lamenting Adonis on a rooftop, and in doing so "forced" his proposal through. A humorous cultic reference is in play. Demostratus was a member of the Bouzygai clan, whose members screamed (*kekragas*, Eupolis, fragment 113 PCG) apotropaic curses during a sacred plowing ritual (cf. Storey 2003: 135–6). Like husband, like wife: both are screamers, distorting political discourse with inappropriate noise carried over from ritual.

44 Rouget (1985); Penman and Becker (2009).

45 See Budelmann and Power (2016: 67–9) for the complementary role of dance in creating these effects.

46 Scholion AD in Homer, *Iliad* 9.129–30; cf. Theophrastus, fragment 112 Wehrli. For the sanctuary, see Robert (1960) and Nagy (1993).

47 Cf. Burris, Fish, and Obbink (2014: 5). The newly rediscovered "Brothers Poem" of Sappho may refer to women's ritual performance there as well: Obbink (2014: 43).

48 The *ololugē* may also have been connected with women's choral performance at Messon at Sappho, fragment 17.16, if a reasonable supplement to the lacunose papyrus text is correct (Burris, Fish, and Obbink 2014: 22).

49 Etymologically, *thespesia* is built on roots relating to *theos*, "god", and *ennepō*, "say, tell". See Ford (1992: 181, 184) for the aesthetic and theological implications of the word. At Sappho, fragment 44.15–17, the "holy song" of (mythical) Trojan maidens celebrating the wedding of Hector and Andromache produces an *achō thespesia*.

50 Carson (1995: 125).

51 I follow the interpretation of Nagy (1993).

52 On the Delian Maidens, whose recurring activity in Delian cults of both Apollo and Artemis is attested through the Hellenistic period, see Calame (2001: 104–10).

53 Peponi (2009: 64).

54 For a defence of the textual variant *krembaliastun* (against *bambaliastun*, "chattering", also transmitted in the manuscript tradition), probably referring to rhythms expressed by small percussive *krembala* or *krotala*, "clappers", see Peponi (2009: 49–54).

55 Peponi (2009: 67).

56 Cf. Lonsdale (1993: 51–70).

2
Hearing ancient sounds through modern ears

Armand D'Angour

An ancient soirée

> Solon the Athenian, the son of Exekestides, was overcome with pleasure when his nephew sang some song of Sappho's at a drinking party, and asked the young man to teach it to him. When someone asked why he was so eager to learn it, he replied, "So that I may learn it and die".[1]

This brief but powerful anecdote about the effect of a musical performance on a famous ancient listener, the archaic Athenian lawgiver Solon, is related by the second/third-century CE Roman polymath Aelian (Claudius Aelianus). Whether or not the story recalls a genuine historical episode, the sentiment put into the mouth of Solon is readily recognizable to a modern reader.[2] Music moves listeners to tears, to joy and to the realm of the sublime.[3]

One might, however, wish to ask exactly what Solon heard – or what Aelian imagined him to have heard – that made him react so strongly. Leaving aside extraneous factors that might have contributed, if not negligibly, to Solon's emotional response – admiration of the performer's looks or skill, for instance, or pride in the achievement of his young relative – let us consider just the verbal and phonic dimension.[4] Was it the words and sentiments of Sappho's poem that Aelian supposed affected Solon so deeply that he would be happy to die only once he could possess them?[5] If so, was the impact made on him a function of their meaning or manner of expression, or was it crucially enhanced by the way they fell into the rhythms of the Sapphic stanza? Or was it something arguably more powerful still, such as the emotional character and

affective qualities of a melody? Or did the effect derive principally from the boy's delivery or vocal expression – the pitch and timbre of his voice, the impression of innocence or pathos, his use of melodic slides and heart-stopping tremolos?

Some unquantifiable and wholly unrecoverable combination of all these elements was, it seems likely, the cause of the deep emotional impact on Solon (as imagined by Aelian) of the boy's singing. Yet a further dimension of beauty and pathos might have been added by the accompaniment of an instrument such as the lyre, its strings plucked softly in unison or in poignant heterophony to the vocal melody.[6] For Solon, as represented in this account, the effect of the performance was evidently nothing less than sublime. But even were it possible to see and hear a faithful audiovisual recording of the boy's performance, we would surely not be in a position to understand and appreciate the impact it created on ancient ears. How much might such a recording teach us, not only about the melodic and instrumental sounds, but about the pronunciation and expression of the Greek language of antiquity. Writing some eight centuries after the presumed date of the episode he recounts, Aelian himself was surely too far distanced from the actual sounds and idioms of Archaic Greek words and music to confidently assert what Solon had actually heard.[7] He cannot have been sure about what the melody, pitch, tonality, rhythms or tempi used by the young singer might have been, let alone how and why the sound of the music correlated with the overwhelming emotion, the mortal rapture, felt and expressed by the older man.

Nonetheless, Aelian was working within a world where both the spoken language and the musical traditions of ancient Greece still had an unmediated connection to the language and music that Solon would have known and heard. This is not the case for the twenty-first-century reader; so is there any hope at all for modern ears in attempting to understand something of the sensations aroused by ancient voices and music? To do so, it might seem a reasonable first try to try to recreate from available evidence some aspects of the various dimensions of sound and performance that have been mentioned, and then to ask how familiar or alien the musical idioms might be to modern ears. This is what I will aim to do here, but it has not been a common scholarly approach, partly owing to the widespread perception that ancient music is wholly lost. That view is now increasingly recognized to be erroneous in more ways than one, but it remains an understandable assessment of our state of knowledge of, in particular, the music of archaic and classical Greece.

What resources, then, might we bring to bear first to hear how the words and music of that period may have sounded? And how might we seek to understand how these might have been heard and felt by those who spoke Greek as their native tongue and had imbibed from youth its musical idioms?

Approaching the sounds of music

Following the lead of ancient authors, scholars of ancient music have tended to focus on technical, literary and musicological rather than aesthetic and musical issues.[8] Indeed the study of the subject has been advanced by a substantial corpus of theoretical and technical writings (both ancient and modern) on rhythm, melody, instrumentation and musical history. Yet complex metrical theory and analysis ought to be complemented by rhythmical appreciation and the investigation of such things as the mathematical basis of scales and modes should be balanced with attempts to listen to and evaluate extant ancient songs, whether by realizing in practice the melodically notated documents or simply attending to the rhythms derivable from the metres of the texts. The attempt to use ancient theory as a guide to hearing the sounds of ancient music has led to eloquent counsels of despair.[9] On the other hand, attempts to realize the sounds of ancient music in practical performance (whether with scholarly or commercial ends in view) have not been strikingly successful, tending to fall between the stools of unacceptable speculation or restrictive positivism.[10]

Must the sounds and effects of ancient Greek music be reduced, then, to either a literary exercise or to esoteric technical exposition? The Greeks and Romans of classical times who danced and sang, singly or in choruses, learned and played lyres, *auloi* and *tibia*, hummed their favourite tunes and cheered on star musical performers, were neither lacking in aural appreciation nor steeped in theory. They experienced the music, its rhythms, melodies and idioms, as an aural phenomenon, and reacted to it, as Solon will have done, appropriately for their time and place. I would argue that the musical sounds to which they sang and danced, for which a range of evidence exists, including the few dozen precious documents that survive with ancient musical notation, need not wholly bypass the taste and musical understanding of modern observers and listeners. Perhaps, then, it should be possible to find a means whereby we might better understand something, however slight, of the sensations these musical sounds were said to have aroused in their time.

Skirting past the thickets of theory, a few investigators of ancient music have occasionally sought to access and appreciate something of the sensations aroused by the actual sounds of the ancient world. They have done so in part by being alert to the evidence of what has been dubbed the "ancient phonograph", the rhythms and sounds inscribed in the words of ancient poetry.[11] The inherent metricality of the ancient Greek language gives rhythm a special claim to importance when considering ancient song. Whereas elements of rhythmical realization, such as tempo, beat and dynamics, must remain a matter of intelligent conjecture, the regular and complex metrical

patterns that gave rise to the rhythms of song, inscribed in the words themselves rather than being separately indicated in a musical score, have been subjected since antiquity to thorough and rigorous analysis.[12]

Meanwhile, scholarly attempts to elucidate the documents of ancient musical notation, combined with practical work on the reconstruction of archaeological relics of instruments, cognitive studies on musical perception and ethnographic perspectives on ancient musical idioms, are beginning to allow for a greater breadth of approaches to the music of ancient Greece – and to a lesser extent ancient Rome, for which no such documents survive[13] – as a set of perceptible auditory phenomena rather than simply as a collection of complicated technical descriptions and theoretical constructs. In what follows I will first outline some features of the sounds, rhythmical and melodic, that may be heard as emerging from such investigations, and then explore how we might better understand some of the sensations that they were said to have created for ancient hearers. Finally, I will touch on the sensations aroused by the timbres of ancient musical instruments and voices, supported by recent projects such as the reconstruction of ancient *auloi*.

Throughout such an exploration, one must remain aware that "ancient music" is a deceptively unitary term. For Greeks of classical times, *mousikē* embraced song, dance, literature and instrumental music. Even if one restricts the examination to "song" (*melos*), the term covers a multitude of variegated musical genres and traditions in the ancient world.[14] The singing of Homeric epic in Ionia in the eighth and seventh centuries BCE, the "New Music" of tragedians and dithyrambists in the fifth century BCE, the cantica of Plautus from third-century BCE Rome, and the hymns of Mesomedes from the time of the Emperor Hadrian represent just a few of the varied strands of musical expression of which we know. In between these termini of Homer and Mesomedes, ancient music will have included the singing of Greek lyric poetry in diverse contexts, the performances and re-performances of victory songs, the dancing songs of dramatic choruses in the theatre, the music of Roman pantomime and a huge range of other kinds of musical expression, private and public, formal and informal. The vast majority of this musical output lacked any kind of notation to record it other than the letters used to indicate the words and thus (up to a point) indicate the rhythms of songs. In what follows I will focus on explaining how one might hear musical elements that can be extracted from two rare documents of notated ancient music that happen to have survived from antiquity, the "Orestes papyrus" of *c.*300 BCE and the "Seikilos Song" of *c.*150 CE.

The sense of rhythm

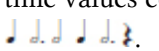
Rhythm was as central to ancient as it is to modern music, and arguably more so in the classical period. But it is not something we can simply assume we can understand as the ancient Greeks did. In particular, anglophone ears will not be familiar with the precise sensations aroused by the quantitative verse patterns of ancient Greek verse. English verse makes use not of quantities but stresses; thus when we recite "T*y*ger T*y*ger b*ur*ning br*igh*t" we hear four equidistant stresses (located on the syllables here italicized) among eight syllables all of roughly equal duration. An equivalent unit of utterance as heard or enunciated by an ancient Greek listener would involve an alternation of four long and four short syllables, as if the words were sung strictly to the time values represented by the musical notes 𝅗𝅥 𝅘𝅥 𝅗𝅥 𝅘𝅥 𝅗𝅥 𝅘𝅥 𝅗𝅥. The impression on the ear is distinctly different, and the difference is not easily gauged. But although Blake's simple four-beat line may impart an aura of solemnity for modern ears, we are immediately cautioned to acknowledge that Greek associations to the quantitative pattern may have been quite different.

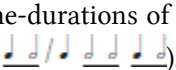
This particular pattern of alternating long and short syllables – long-short-long-short-long-short-long – forms a colon (*kōlon* is Greek for "limb", in conformity to a terminology of body parts attached by ancient metricians to metrical units, e.g. foot = *pous*, finger = *daktulos*) to which was given the name *lēkuthion*. The latter word literally connotes a small earthenware flask ("bottle of oil") used for unguents. The metre's name was born of a scenario in the comedy *Frogs* of Aristophanes of 406 BCE, in a scene of which the character of the tragedian Aeschylus repeatedly uses a form of this rhythmical pattern in interjecting the words *lēkuthion apōlesen* ("l*o*st his b*o*ttle of *oi*l, he d*id*") to undercut the solemn prologue openings of his rival Euripides with what was probably heard as a ribald *double entendre*.[15] One might compare a narrator beginning with a solemn introduction, "There was once a …" being hijacked by an interjection that turns the words into a limerick, such as, "… young lady from Ryde, who ate sour apples and died". Rather like the rhythm of the limerick for us, then, the rhythm of the *lēkuthion* may have had far from solemn associations for the Greeks; in fact, its most characteristic occurrence in *Frogs* is in the regular *brekekekex koax koax* that represents the amphibians' rudely insistent croak.[16]

The Greeks recognized that the rhythmical elements of words, their long and short syllables, could be used to create expressive effects.[17] Some were obviously mimetic and the effects are no less evident to modern ears as they would have been to ancient ones. In the *Iliad*, for instance, a verse consisting of just twelve long syllables (*Iliad* 23.221, *psuchēn kiklēskōn Patroklēos deiloio*, "invoking the spirit of piteous Patroclus") serves to represent the long-drawn-out keening of Achilles over his slain friend. Elsewhere in Homer, predominantly dactylic verses (*DUM-di-di DUM-di-di*) may imitate the

agitated galloping of mules (*Iliad* 23.116) or the clattering descent of Sisyphus' rock ("down to the ground with a bump and a bound the disorderly boulder descends", *Odyssey* 11.598). Such metrical word-painting combines assonance and consonant clusters to represent, for instance, the rattle of hooves or the clatter of a falling rock. Verbal music of this kind, of which many instances of a subtler kind may be detected, was subsequently imitated and put to artful use by Latin poets.[18]

Although ancient theorists tend to focus more on the choice of words than on qualities of rhythm and sound, such devices show the undoubted awareness of Greek musician- poets that metre and rhythm might be employed for auditory effect. However, the purely quantitative approach to metrics elides questions of pulse and tempo, leaving it unclear how most rhythms were heard in practice. A few surviving instances of the use on the musical documents of dots or points (*stigmai*) placed above syllables on the musical documents to indicate *arsis* (the raising of a foot or part of the body, or the upbeat of a rhythm) and *thesis* (the placing of a foot or downbeat) offer invaluable pointers to how certain rhythms might have worked. They importantly demonstrate that we cannot wholly rely on our own rhythmical assumptions or aesthetic intuitions when attempting to appreciate the sense of "beat" or pulse in Greek metre.

The earliest evidence for the articulation of something akin to a "beat" is found on the papyrus fragment that contains part of a choral ode from Euripides' tragedy of 408 BCE, *Orestes* (lines 338–44), which presents what scholars generally suppose was Euripides' own musical setting.[19] The ode is composed in dochmiacs, a metre known for exhibiting qualities of agitation or passion. The words fitted to dochmiac rhythms make the emotional associations clear: in this instance, the chorus are singing to the matricide Orestes of "your mother's murder, which makes you leap in frenzy like a bacchant" (*māteros haima sās ho s'anabakkheuei*). The basic form of the dochmiac *metron* (measure) is ∪ – – ∪ – (short-long-long-short-long), although it regularly allows resolution (e.g. ∪ ∪∪ – ∪ –). The modern reader is inclined to stress the longs in enunciating the basic pattern, producing a rhythm as indicated by the mnemonic "the w*i*se k*an*garo*o*s [… *tum*] / pref*er* b*oo*ts to sh*oe*s [… *tum*]". This regularizes the metre in a way that appeals to modern sensibilities: it effectively creates three equidistant beats to each metron, with time values equivalent to 1-3-2-1-3 [+2] i.e. ending with two beats rest: that is,  .

Ancient musical theorists, however, note that the relation of heavy to light syllables was 2:1, which would make the correct time-durations of syllables in a pair of dochmiac cola 1-*2*-2-*1*-*2*/1-*2*-2-*1*-*2* (), a far less sedate rhythm. In addition, the marks (*stigmai*) on the Orestes papyrus

indicate that the downbeat (*thesis*) fell, at least in this case, on the second and fourth/fifth elements (as shown here italicized). This creates a very different effect to "the wise kangaroos": a more accurate mnemonic representing these dynamic stresses would be "that *ol'* man *riv*er/he *jus'* keeps *ro*lling".[20] The strict time-durations split the colon into an unequal ratio of syllable-lengths 5:3, a measure roughly divided by the two downbeats (indicated by the absence of *stigmai*). This combination of uneven and regular rhythms will have reinforced what ancient musical authors speak of as the "mixed" rhythm of the dochmiac. We can begin to understand how, with the cross-rhythms and offbeat stresses thus emphasized, this was considered a "naturally" agitated rhythm.[21]

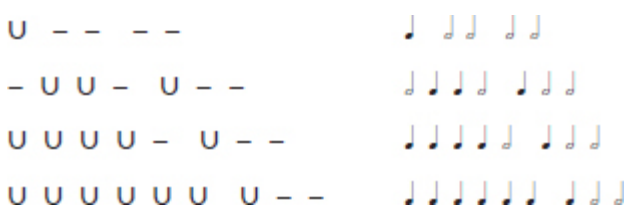
The ditty composed by Seikilos around 150 BCE, preserved almost intact on a marble column (grave stele) with its words supplemented by ancient notation, offers further insight into sounds, effects and idioms of ancient music:

> Ὅσον ζῇς, φαίνου,
> μηδὲν ὅλως σὺ λυποῦ·
> πρὸς ὀλίγον ἐστὶ τὸ ζῆν,
> τὸ τέλος ὁ χρόνος ἀπαιτεῖ.[22]

Taking rhythmical issues first, the poem may be translated isometrically (i.e. with the same number of syllables in English as there are in the Greek) as follows:

> While you live, shine bright.
> Don't let sorrow you benight.
> We don't have life for long, my friend:
> To everything Time decrees an end.

Had the text been unaccompanied by further rhythmical and melodic signs, the syllables of the Greek words would indicate the following metrical shape:



Duration-signs place over the inscribed text on the Seikilos column show, however, that the intended rhythm had evenly spaced pulses. To indicate the regularity of the balanced phrases of the resulting rhythm, the syllables are better presented as follows (using ⋀ to mark the prolongation of a phoneme):[23]

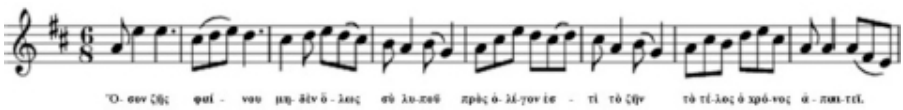
∪ – ∧ – ∧ – ∧ –

– ∪ ∪ – ∪ – ∧ –

∪ ∪∪ ∪ – ∪ – ∧ –

∪ ∪∪ ∪ ∪∪ ∪ – ∧ –

The combined rhythm and melody may be transcribed into modern staff notation as follows:



Given the standard pronunciation of Greek in the period of its composition, it is notable that the line endings create assonances AABB (*-ou, -ou, /-een, -ee*) as in the English version. This rhyming ditty is thus not best analysed according to strict classical canons of metre (which did not use rhyme), as is generally attempted.[24] To a modern ear, the overall effect of the four balancing verses, divided as two rhyming couplets and with regular up and down beats, is that of a leisurely tune; and it seems likely that the ancient composer designed the melody to suit the meaning of a text advocating a tranquil acceptance of the shortness of life. Perhaps above all what makes the shape of the piece strikingly familiar to a contemporary musical sensibility is the fact that it falls into the pattern of a four-bar period. Since at least the eighteenth century this pattern has notoriously become, consciously or otherwise, a staple element of the composition of Western classical music.[25] We should not rule out the possibility that its appeal to Western ears derives from origins that lie much further back in the European musical tradition.

The effect of melody

An equally significant aspect of the Seikilos song is the way the composition reflects mimetic sensibilities, as regards both rhythm and melodic shape, that are familiar to a modern listener. Although the melodic profile rigorously accords with the word-pitches of the Greek, it combines this principle with a clear mimetic approach to the meaning of the verses.[26] The upbeat mood suggested by the opening verses is programmatically represented by a melody created of rising patterns, before it falls at the halfway mark on the word "benight" (λυποῦ). The poem then turns to warn of the shortness of life with a rhythm that increasingly emphasizes short syllables. A sharp melodic rise and fall then imitates life's brief trajectory, and the final verse comes to a dejected

cadential close.

In its general musical effect, the melody of the Seikilos poem would not be out of place in the context of Gregorian chant from seven or more centuries later; the tune can still be sung with pleasure. It seems perverse to rule out a connection (as has often been done) of this late example of pagan music to the earliest acknowledged Christian roots of the European musical tradition.[27] It offers important confirmation to the student of ancient Greek music that even the musical idioms of much earlier periods may have exhibited connections to the way music is still heard and appreciated in contemporary Western(ized) contexts.

Although hard evidence is largely lacking, we may suppose that the musical idioms that are observable in the Seikilos song did not vastly alter across the centuries that divide it from its classical predecessors. However, in the classical period – some half a millennium earlier than Seikilos – conformity to the rhythms of everyday speech seems generally to have required setting no more than a single musical note of appropriate duration to a syllable, a practice indicated by the strictness with which metres are generally handled and responsional verse is composed. "Every Greek poet was his own composer", writes A. M. Dale, "and no poet would write words in elaborate metrical schemes merely to annihilate and overlay these by a different musical rhythm".[28] This dictum is unduly restrictive. It is perfectly possible, and there are parallels in many traditions including English sung verse, for the composition of words to adhere to strict metrical rules even if the subsequent addition of melody more or less distorts the underlying quantities. In any case, an authoritative ancient source, Dionysius of Halicarnassus, who was in a position to hear ancient performances of song, asserts a strikingly contrary claim:

> Prose diction does not violate or change round the quantities of any word, but keeps the long and short syllables just has they have been handed down naturally; but *music and rhythm* alter them, diminishing or increasing them, so that often they turn into their opposites, for they *do not regulate their time-values by the syllables but the syllables by the time-values.*[29]

Even in the classical period, deliberate deviation from note-for-syllable melodic accompaniment was notoriously attested for Euripides, whose prolonged setting of the first syllable of *heilissete* ("twirl") is repeatedly parodied by Aristophanes. Deviation from word-pitch in a composed melody may also have been a New Musical innovation adopted or pioneered by Euripides.[30] Significantly, such non-conformity is a feature of the *Orestes* musical papyrus, where the melodic line appears to be composed to match words' meanings rather than the pitch inflections. Thus the words

katolophuromai ("I lament") and *kathiketeuomai* ("I beseech") are set to a falling cadence, whereas the latter three syllables of *anabakcheuei* ("makes you leap like a bacchant") are set to a note pitched around a fifth higher than the latter, suggesting the use of a mimetic "leap". This kind of programme music was considered a notable feature of the New Musicians' oeuvre, and it is likely to have struck listeners as a powerful new way of expressing musical meaning.[31] As with the melody of the Seikilos song, Euripides' application of a falling melodic cadence to fit a word connoting dejection, and an apparent upward jump in pitch to indicate a leap, conforms to modern Western intuitions about the meaning of melodic shape.

A more obviously alien feature, however, of Euripidean and earlier melody, which has given pause to modern commentators seeking to "hear" the music and gauge its effect, is the use of quarter-tones.[32] The use of scale-structures employing microtones in some form is indicated by ancient authors, who expound (in some cases with mathematical precision) the structures of the enharmonic genus. ("Genus" refers to the internal structure of intervals in a section of the scale.) Enharmonic melody was said to be characteristic of the music of fifth-century poet-composers such as Simonides and Pindar, although it was acknowledged as having yielded to "sweeter" and less demanding chromatic melodies (using semitones) by the fourth.[33] The use of distinct intervals smaller than a semitone is unfamiliar in modern Western music, although of course prevalent in other traditions such as those of Middle Eastern and Asian music. Cognitive studies on the perception of microtonal intervals confirm that the appreciation of such intervals is a matter of acculturation.[34] Once the prejudice is abandoned that a quarter-tone is "a note played out of tune", it is clear that different kinds of expressive effect might be achieved by using scale-systems to which microtones are integral.

More important than the simple perception of microtonal intervals as involving separate notes is an understanding of how such intervals may relate to broader melodic structures such as the modes (*harmoniai*) of early Greek music. A few musical documents show that Greek melodies tend to revolve around distinct tonal centres, and the limited evidence for the placing of microtonal intervals has suggested that they may often have served as "passing notes" leading to these "standing note" pitches.[35] A practical attempt to fit words to an attested ancient musical scale incorporating microtones was made for a UK television documentary, in which Sapphic stanzas were set (following word-pitch) to notes of the so-called Mixolydian mode.[36] It is certainly evident to a modern musical ear that a song composed to this scale, defined in modern terms as *e e♯ f a a♯ b♭ e'* (the sharp notes indicate quarter-tones higher than those preceding), will gravitate to tonic centres formed by the lowest and central note of the tetrachord, *e* and *a*. The latter note, identified as the *mesē*

(in principle the "central" strings of a seven-stringed lyre) was heard as equivalent in importance to the tonic of a scale. The outlying high *e'*, forming an interval above the *b*♭ of what we would call an augmented fourth, allows a plangent rise and fall, perhaps for occasional emphasis of the syllables of significant words. The overall effect to the modern Western ear is that of a song composed in D harmonic minor, revolving around the dominant *a*, and with some leaps from the dominant *b*♭ to the high-pitched tonic *e* above. Combined with the rhythms of the Sapphic stanza, the result is a sad-sounding, haunting melody, a striking analogue to the "lamentatory and tragic" effect attributed by the ancients to the Mixolydian mode.[37]

Whereas the associations of the minor key for the modern listener cannot simply be mapped onto that of the Mixolydian mode for the ancient, some support for the connection emerges from cognitive studies showing that the perception of the emotional resonance of intervals can be similar in Western and non-Western musical traditions. Thus in Indian ragas, the minor second has a "tensed" emotional effect that bears comparison to the effect of sadness attributed to the minor third in Western music.[38] Given the broader recognition of allied rhythmical and melodic effects in ancient and modern ears, our agreement with ancient sources about the lamentatory effect of a minor-sounding mode is unlikely to be a coincidence. To that extent, we may be one small step closer to understanding something of Solon's emotional rapture in response to his nephew's singing.

Listening to voice and instrument

Along with rhythm and melody, there remain various aspects of the sensations aroused by ancient musical sounds for which modern parallels may be found. (See Kidd, this volume, on the effect of sounds on the emotions.) The word most commonly used to commend a quality of musical sound produced by voices or instruments is *ligus*, which was said to connote a sound that is

> pure and penetrating, like the voices of cicadas, grasshoppers, and nightingales, and generally like any pure vocal emission with no extraneous noise mixed in. It is characterized not by loud volume, low register, or interacting sounds, but by a high-pitched utterance that is pure and well-defined.
>
> (Aristotle [attributed], *On Things Heard* 804a21–8)

The term, used to describe voices, both human and animal, and instruments including lyre and *auloi*, highlights the importance of a piercing sound quality. It would have been an important aspect of the *aulos* sound used to accompany of fifteen singer/dancers in the chorus a Greek tragedy, or for the performance of the Pythian Air (*Pythikos nomos*), a popular semi-improvised set-piece for

solo *kithara* or *aulos* that celebrated Apollo's slaying of the python at Delphi.[39] The latter piece encouraged the use of virtuoso technical techniques to create strident instrumental sounds that sought to imitate the contest between beast and god, and the screams of the dying snake.[40] (See Nooter in this volume on the sounds of animals in tragedy.) A similar expressive mimeticism evidently informed the narrative songs (*nomoi*) of the avant-garde, late-fifth-century performer Timotheus, who was known for exploiting musical onomatopoeia and dynamic extremes. The music of one of his showpieces (*Nauplios*) was said to have represented a storm and a shipwreck, whereas another (*Birthpangs of Semele*) imitated the cries of a woman in labour.[41] The continued re-performance of these pieces suggests that audiences were enthralled by their mimetic vigour.[42]

Ancient commentators lack, however, a discriminating range of terms to describe their responses to music. Positive evaluations were commonly made using terms as beautiful, pleasing and sweet (*kalos*, *hēdus*, *glukus*). Music might be said to convey delight, pleasure and enchantment (*terpsis*, *hēdonē*, *thelxis*), and could, along with accompanying words, move listeners to laughter or tears.[43] "May I not live if *mousikē* is absent", declares the chorus in Euripides' *Heracles* (676), linking in a manner reminiscent of Solon the pleasure of life itself to the presence of song and dance. However, ancient authors are inclined to conflate the effects of musical sound and poetic meaning, and evaluations of specifically musical rather than verbal qualities of specific performances are virtually nonexistent.[44] It is not clear whether music alone is the object of Socrates' commendation of Tynnichus' well-known paean as "virtually the most beautiful of all songs", or whether occasional references by Aristophanes to the sweet songs of the tragedian Phrynichus refers solely to the sound of the melodies.[45]

Even if these remarks are taken to suggest a distinction of the melody of a song from its "lyrics", the descriptions tell us nothing about the sensations aroused by the individual pieces other than to suggest that their sound was considered appealing. We are made aware, however, of changing attitudes in the late fifth century BCE towards earlier musical sounds. Some styles that in their own time were no doubt unexceptional had come to seem old fashioned, whereas new sounds were being welcomed by audiences in the Odeion and theatre.[46] In Aristophanes' *Frogs*, the character of Euripides scorns his rival Aeschylus for being a "poor song-composer who always repeats the same thing time and again" (1249–50). The Aeschylean verses to which he alludes to illustrate this alleged inadequacy are rhythmically identical, and interspersed with the *tophlattothrat* that imitates the strumming of a *kithara*. The verses may also have been sung to identical melodies, given that the pitch accents on the words used in the different verses fall in very similar places.[47] By contrast,

the music of Timotheus and Euripides was distinguished by qualities of rhythmical and melodic variation and innovation.

In addition to the rise of famous citharodes such as Timotheus, the enjoyment of musical sound was enriched by the elevation of the *aulos* as a solo instrument.[48] The star aulete of his day, the Theban Pronomos, was reported to have "delighted his audiences with his facial expressions and bodily movements" (Pausanias 9.12.5–6); and the sounds he produced on the pipes were enhanced by his own invention of rotatable collars to adjust the pitches and modulate between modes. Recent work on the reconstruction of double pipes, and the revival of techniques that were used to produce its sounds, have begun to show how the instrument could be both the vehicle not only of the high-pitched screech suitable for imitating the sounds of the contest of Apollo and the Python, but also of blended sounds of deep and sinuous beauty.[49] Plato would have banned the instrument, with its dangerously emotional associations, from his ideal state, but his recognition of the sheer sensual power of sound is evidenced by his concern that a young man should not be "unharmonized" by allowing music "to captivate his soul … so that he spends his whole life humming, enraptured by music" (*Republic* 411a5–9). We may perhaps imagine Solon in such a state of rapture and seeking to recapture through internal iterations, just as we might today, the sublime effect of the song he so fervently desired to possess.

1 Aelian, fragment 187 (ed. Herscher) = Stobaeus 3.29.58.

2 Examples of closely similar statements, submitted by fans of popular music bands, abound on YouTube.

3 Solon's linking of his response to the idea of dying resonates with the notion of sublimity: Bicknell (2009: 23–44).

4 Experimental studies support the importance of visual stimuli in evaluating musical performance: e.g. Tsay (2013).

5 The particular form of Solon's wish reflects the Socratic–Platonic formulation of *erōs* as a desire "to possess the beautiful forever" (Plato, *Symposium* 207a); a short while later in the dialogue, Solon himself is cited as an example of someone who produced objects of deathless beauty (209d).

6 On ancient heterophony, see West (1992: 205–7).

7 The pronunciation of Greek in Aelian's time (let alone Sappho's Lesbian dialect) would have been notably different from Solon's: for an example with phonetic transcription, see Horrocks (1997: 89–90).

8 Important studies in this category include West (1992), Mathiesen (1999), Barker (2007) and Hagel (2011). Cf. Barker in this volume.

9 Cf. the ringing pronouncement attributed to "a professor of Greek" of the 1930s quoted in Mathiesen (1999: 5): "Nobody has ever made head or tale of Greek music and no one ever will. That way madness lies".

10 For a discussion of the shortcomings of various realizations, see West (2013: 200–7).

11 Butler (2015).

12 The standard treatment of Greek metre is West (1982a).

13 For a thorough survey of the material, see Moore (2012).

14 For the different spheres constituted by *mousikē*, see D'Angour (2015: 189–91).

15 The point of the joke is debated; for a catalogue of suggestions and a new one, see Sansone (2016). I suggest that it may relate to the use of *lēkuthia* as dildoes: modern data indicate that the loss of such objects during use is not a negligible phenomenon (Cologne and Ault 2012), with the number of medical incidents related to such activity in the United States over a five-year period reported as nearly 18,000 (http://flowingdata.com/2016/02/16/million-to-one-shot-doc).

16 Metrical lēkuthia may also be solemn, however, as frequently in Aeschylus, e.g. the invocation to Zeus in *Agamemnon* 160–91; whereas four-beat verse in English may be trivial, as in the children's riddle "Eeny-meeny-miny-mo". The picture is complicated, and context is crucial; metre itself rarely determines a particular ethos (Dale 1969: 139–55). The rhythm of the limerick itself may be plangent (as heard, for instance, in the second theme of the last movement of Beethoven's D minor violin concerto).

17 Aristides Quintilianus 2.11.35–42.

18 Wilkinson (1963); Butler (2015). See also Butler, this volume.

19 *DAGM* (Pöhlmann & West 2001) no.3 (*Pap. Vienna* G2315).

20 For the origin of this mnemonic, see D'Angour (2006a: 492).

21 Aristides Quintilianus 2.15.34–44.

22 *DAGM* (Pöhlmann & West 2001) no. 23.

23 In metrical theory, this element is referred to as *syncope*, which literally connotes a "missing beat"; however, the term is misleading since in practice the beat so indicated is not an absence or a rest, but a prolongation of a syllable.

24 Formally the metre can be analysed (cf. West 1982a: 301) as a series of iambic dimeters (∪ – ∪ – | ∪ – ∪ –) with syncopation (∪–∧–) and resolution (⋃ ∪∪ ⋃ ∪∪); but the movement of verse 2 (and arguably verses 3–4 as well) is heard more readily as trochaic e.g. that of "Humpty Dumpty sat on the wall".

25 "On the whole, it is clear that by the 1820s the four-bar period has extended its dominion over musical composition" (Rosen 1995: 261). A similar four-bar period is observable in two other musical documents of the period, Mesomedes' (?) *Invocation to the Muse* and *Hymn to Calliope* (*DAGM* [Pölman & West 2001] nos. 25, 26).

26 The opening rise of a melodic fifth, a notable exception to the principle of accord with word-pitch, is explained as representing a "conventional *incipit*" (West 1982a: 301). A similar convention may operate in popular English nursery songs such as "Baa-baa black sheep" and "Twinkle twinkle little star", which exhibit a rising fifth in their opening phrase.

27 Some early commentators were even tempted to suppose that it was a Christian composition, and it has been noted that the melody has a close parallel in the Gregorian antiphon *Hosanna filio David* (Reese 1940: 115).

28 Dale (1969: 161).

29 Dionysius of Halicarnassus, *On Literary Composition* 64. Emphasis added.

30 D'Angour (2006b).

31 D'Angour (2015: 199). The fact that captives in the Syracusan quarries in 413 BCE were able to save their lives by singing Euripides' lyrics (Plutarch, *Nicias* 29) is indicative of the sensational effect of his new musical style.

32 It is not certain whether the setting of the *Orestes* passage indicates quarter-tones or semitones: the notation could indicate either, but the common use of the enharmonic genus in fifth-century tragedy has led most interpreters to assume a quarter-tone reading.

33 Aristoxenus, *Harmonics* 1.23.

34 Kendall and Carterette (1996: 97–8).

35 Monro (1894: 93–4).

36 BBC TV4, "Sappho: Love and Life on Lesbos", broadcast in May 2015, featured two stanzas of Sappho sung by Kalia Baklitzanaki (podcast: www.bbc.co.uk/programmes/p02qpz87).

37 Aristoxenus fr. 81, Plutarch (attributed), *On Music* 1140f.

38 Mathur et al. (2015).

39 West (1992: 212–14).

40 A prize-winning fifth-century re-performance of the "Many-Headed Air" (*polykephalos nomos*), a piece with similar mimetic and structural qualities depicting the slaying of the Gorgon by Perseus, may be the event celebrated by Pindar in his Twelfth *Pythian* Ode. Cf. Phillips (2013).

41 Athenaeus, The Learned Banqueters 8.337f, 352a; see Csapo and Wilson (2009: 283). A parallel interest in mimeticism may be drawn with contemporary aesthetic criteria for judging classical visual art: D'Angour (2011: 151–3).

42 Csapo and Wilson (2009).

43 *Homeric Hymn to Hermes* 419–20; Peponi (2012: 51–8); Halliwell (2011: 45–9).

44 Havelock (1963), reaffirmed by Ford (2003: 8–9), stresses that music and words were conceived as a unity.

45 Tynnichus: Plato, *Ion* 534d5–e1; Phrynichus: Aristophanes, *Birds* 748–51, *Wasps* 220.

46 D'Angour (2010).

47 Danielewicz (1990); cf. D'Angour (2007: 296–7). The critique may be about repeated words as well as music, since "Euripides" parodies a repeated verbal refrain of a kind recognizable from Aeschylus' surviving choruses: Dover (1993) on *Frogs* 1264–77.

48 *Kitharōidia*: Power (2010).

49 The practical fruits of ongoing research on the reconstructed Louvre *aulos* by the piper Barnaby Brown may be heard on www.doublepipes.info/category/louvre-aulos/.

3
Sounding out public space in Late Republican Rome

Erika Holter, Susanne Muth and Sebastian Schwesinger[1]

The contemporary shift in humanities towards the senses, meaning their historical and situational specificity on the one hand and the sensory embeddedness of both knowledge and conceptual understanding on the other, has focused attention on the sensory dynamics of spatial configurations. As early as 1985, the French philosopher Michel Serres wrote on the interaction of sound, space and the senses, arguing that we are disposed to be attuned to our surroundings. Sensory perception, Serres argues, is the necessary prerequisite without which specific symbolic, that is, meaning-producing systems, cannot evolve: "Potential becomes actual, the sensible becomes sense, a single note emerges from the din".[2] Phenomenological theory, in connection with the sound and soundscape studies that originated in the late 1960s and that have proliferated in the humanities since the beginning of the twenty-first century, has shown not only that sound and auditory perception are shaped by cultural propensities, but also that sound perception itself shapes our situational awareness.[3] That means that the sense of sound plays an integral role in shaping and constructing a spatial situation.

Sound does this in two ways: on the one hand as a sound object, on the other as a dimension of space itself. We encounter the former in public spaces as functional sounds that serve to inform or warn us of certain events (e.g. car horns, bells) or to indicate the results of certain actions (e.g. the high-pitched beep emitted when a ticket is validated with an electronic punching machine). Mostly the product of elaborate sound design, these audio signals help us navigate through our daily routines. They guide us to rush, stop, repeat, step

back or duck. However, sound can also be regarded as the mediator of what Barry Blesser and Linda-Ruth Salter have named "aural architecture", the architecture of a space as perceived through listening to the interactions between sound sources and spatial elements.[4] Sound is, therefore, a dimension in which we experience space – its unique shape and scale – that gives form and meaning to all sonic events that occur within a given architecture. It would be misleading to attribute the corresponding acoustic design solely to modern concert halls, theatres or clubs. Regardless of whether or not the acoustics of a space are orchestrated intentionally, sound proves to be a constitutive factor of public culture, one in which sonic affordances entangle us in situations to which we, by moving and making sounds, are also contributing. For example, public fountains have been shown to have a very strong impact on how people perceive public places and how they behave in them.[5] They are not only attractive because they are places of refreshment or visual pleasure, but also because they provide an oasis of aural calm within the cacophony of urban noise. In this case, calm has to be understood relatively, as the noise of the fountain masks the surrounding city din almost perfectly and provides at the same time an ideal spot for private conversation that cannot easily be eavesdropped on.[6] This one example already illustrates how architectural interventions often have acoustic consequences for the use of urban spaces even when they might not have been designed to do so. Especially when considering public culture as a space of interaction and communication, the importance of sound as a medium of spatial functionality grows. In addition, we have to take into account how, along with the material parameters already mentioned, immaterial ones such as education, law or emotional regimes[7] also play a part in the construction of a public auditory *Lebenswelt* ("lifeworld").[8]

When taking this understanding of sound into account, it seems surprising that the most famous and important public spaces in antiquity, such as the Forum in Rome, have been investigated almost exclusively with a focus on their visual function as spaces in which individuals or groups display and experience their collective or personal identities and status.[9] Approaches such as these often fail to take the full range of experiences in these public spaces into account. These spaces were characterized by a multitude of activities that engaged all the senses, not only the visual: for example, bustling markets, civic assemblies, public speeches and law courts, processions (including funerals, on which see Hope, this volume) and festivals. The following chapter presents a case study in which we specifically focus on the sense of sound by studying speech comprehension during public addresses in the Roman Forum, to serve as an example of how a specific soundscape of these public spaces was generated and how we can use the reconstructions and simulations of such

sonic events in order to fully understand the multivalent experience of these spaces. This case study is a result of the interdisciplinary collaboration between classical archaeology, cultural history and audio communication. We hope, by bringing together the various research methods of our different disciplines, to develop a research instrument for audiovisual experience in antiquity.[10]

Simulating audience experience: architectural reconstruction and auralization

The first step towards any reconstruction of a sensory experience is the reconstruction of the built, architectural space of the sensory environment. When using simulations in order to study historical, no longer extant spaces, a digital model supported by as much scientific evidence as possible is a necessary prerequisite. Our case study on public addresses and assemblies in the Roman Forum begins therefore with a (digital) reconstruction of this ancient public space, provided by the ongoing research project Digital Forum Romanum. The goal of the project is to create a diachronic digital reconstruction of the Forum from the Archaic period until Late Antiquity and the Early Middle Ages that is intended to go beyond the function of simple visualization in order to provide a new tool for further research.[11] In keeping with this goal, the project has reviewed and analysed all the evidence – archaeological, literary and architectural – for the different structures in the Roman Forum, considering very carefully the reliability of these disparate sources when reconstructing the different phases of this constantly changing public space. Each decision we make during the reconstruction of each individual building is being documented and will be made available publicly in order to foster a discussion around the reconstructions, allowing other researchers to profit from the existing reconstructions and critically analyse results obtained using these models, such as the simulations presented here.[12]

Figure 3.1 Digital reconstruction of the Roman Forum in the Late Republican period

The case study presented in this chapter focuses on the auditory experience of participants in public assemblies in the Forum in the Late Republican period (Figure 3.1).[13] We would therefore like first to take a look at the architectural reconstruction of the different locations in the Forum that have come down to us as the venue for public speeches and assemblies during this period. The oldest of these is the Comitium (Figure 3.2), the open area situated in front of the Curia (senate house), where the *comitia*, the decision-making assembly of all Roman citizens, met.[14] Curia and Comitium constituted an architectural complex together with the very first speaker's platform on the Forum, called the Rostra ("ships' beaks") for the naval rams attached to it after the Roman naval victory in Antium in 338 BCE, which was located on the south side of the Comitium.[15] Although the organization of the area of the Curia, Comitium and Rostra is attributed by much later literary sources to the kings of Rome, the archaeological situation for this period is murky. At the latest, the beginnings of the Comitium and Rostra as a functionally developed space can be traced to the foundation of the Early Republic and its attendant Republican political structures, although the space itself shows signs of human intervention at an earlier stage.[16] Although newest research proposes bringing the date of its organization backwards to the Regal period, the first built structures of the speaker's platform must have been established by the beginning of the Early Republican period, a step that underlined the new political importance of the public assemblies gathered here.[17] Speaking from this platform, the speakers were able to address the citizens gathered in the Comitium. The continued importance of this space for the political self-image of the Roman people can be shown by the increasing placement in the mid

fourth century BCE of honorific statues and monuments in the area of the Comitium and on the Rostra, such as the ships' beaks from Antium in 338 BCE mentioned above. At some time during the third century BCE, the Rostra was rebuilt as a curved structure, with steps leading up to it from the north.

Figure 3.2 Digital reconstruction of the Curia–Comitium–Rostra complex in the Late Republican period

A break with tradition occurred for the first time in the middle of the second century BCE, when the speakers from the platform turned their backs on those assembled in the Comitium (and, by extension, turned their backs on the senate house) in order to face the crowds gathered on the other side of the Rostra, in the central Forum. The place of public assembly appears therefore to have moved from the Comitium to the Forum proper, a change that is not reflected in the architecture or material remains of this space and is only passed down in literary tradition.[18]

Figure 3.3 Digital reconstruction of the Temple of Castor in the Late Republican period

In the second century BCE, a further area of the Forum became increasingly important as a place of public assembly: the Temple of Castor (and Pollux) on the opposite side of the Forum, which had undergone a renovation in the early second century BCE, when a speaker's platform was attached to the temple podium.[19] The temple podium itself could possibly have been used earlier for this purpose, with the renovation indicating an increased need for the architecture to conform to this new function; literary sources, however, first mention speeches and public assemblies in front of the Temple of Castor starting in the mid second century bce.[20] A further restoration of the temple by Lucius Caecilius Metellus in the late second century BCE, which restored the temple in the monumental, Hellenistic style of architecture and is the form of the temple used in the simulations, also included a platform on the temple podium from which to address the public (Figure 3.3).[21]

For the most part, interpretations of these spaces focus on their visual, symbolic potential. One scholarly interpretation investigates the buildings on the Forum representing "monumental history" as places of collective memory or as places of self- display: in this vein, the Comitium–Curia complex, with its architectural form unchanged until the first century BCE since its first construction, reflects the enduring Republican tradition of the Senate.[22] Similarly, the Temple of Castor functions as a victory monument for the Roman people, because its original construction commemorated the victory over the Latins. Still other interpretations examine the building projects on the Forum solely through the lens of ideological motivation.[23] During the Conflict of the Orders, the Temple of Castor therefore became a symbol of patrician identity, because the Dioscuri, like the patricians, were considered *equites* ("horsemen") and thus signified the patrician dominance of the Forum.

However, interpretations focusing on the symbolic nature of architecture often fail to take into account that architecture serves, first and foremost, a functional purpose.[24] The speaker's platforms were intended to provide an ideal space for giving speeches to public assemblies, raised up for optimal visibility and comprehension of the speaker. Space is not just the visual area represented by images, like those generated by architectural modelling, but a nexus of multiple experiences. Our case study focuses on one of the central experiences of the Forum: public speech and assembly, creating a space of political communication. Our central question is how well the design of this space for this purpose actually worked.

From the very beginning of the Republic, political communication in public spaces, based on oral interchange as opposed to written media, was a central aspect of Roman society. Public assemblies met in the Forum in *contiones*, meetings convened by a magistrate to discuss political and legal matters, often meant to provide the citizenry with information and explanations regarding pending votes.[25] The *contio* itself did not make a decision; instead, it was a necessary precursor to the *comitia*, the public assembly in which the citizens voted in elections or on other legal issues. In addition, the *contiones* were the appropriate platform from which to make public announcements, proclaim victories in battle and report on senate resolutions, all events in which the people could experience themselves as part of a (victorious) whole. And it was at these public assemblies that the *plebs* and *nobiles* met and communicated, an activity essential for creating a cultural consensus that could lead to a passing of even controversial legislation. *Contiones* continued to play an important role in the Late Republican period and are known to have been held in each of the architectural spaces mentioned above.

As a result, the functional importance of the Forum cannot be understood solely by its architectural design and symbolic context. Although measures undertaken to alter its architectural appearance can be used as a first indicator for underlying functional transformations, an in-depth analysis of the Forum as a space for political communication like the one we pursue here is greatly enhanced by the simulation of these assemblies by means of digital media. In particular, we compare the three different speaking positions known to have been used in the Republican Forum: from the speaker's platform towards the Curia, from the speaker's platform towards the Forum itself, and from the Temple of Castor. In addition to populating the Forum with crowds and recreating the point of view of a listening person, the auditory experience itself needs to be reliably recreated. The methods of virtual acoustics can be used to reconstruct a reasonably objective aural experience beyond a historical soundscape composition.[26]

The experimental research set-up provided enables us to take advantage of

the fact that sound qualities change dramatically when various parameters of the space, such as architectural construction or audience noise level, are modified. Simulating different configurations of these parameters allows us to compare the functional capacity of these spaces, in this case in terms of their capability for speech transmission. By analysing the differences in sound quality, we can assess what influence various parameters have on auditory comprehension (e.g. how soft does the speaker's voice have to get before no one can understand him anymore; when addressing a tumultuous crowd, at what distance does it no longer matter how loudly the speaker can deliver his speech) and in which configuration of parameters auditory comprehension is optimized. Our method is dynamic, simultaneously simulation and experiment.

Within virtual acoustics, four important elements must be considered in order to create a scientific reconstruction of aural experience. The first of these is the pure signal: in our case, the delivered speech itself. Among the most famous speeches known to have been given during a *contio* are Cicero's second and third oration against Catiline, fulfilling the function of the *contio* by informing the Roman people of imminent danger to the state. We chose an excerpt from the third speech against Catiline for our auralizations and hired a trained orator of similar age to Cicero at the time to record it, asking him to project himself into a speech scenario in which he is required to address as many people as possible, since the content of this speech is so crucial. His speech signal was recorded in an "anechoic" studio, the architecture of which diffuses almost all soundwaves so that the recorded speech signal includes virtually no reverberations.

The second element consists of all acoustically relevant infrastructure, which, in the words of Brian Larkin, contributes "a powerful mediating force that produces new modes of organizing sensory perception, time, [and] space".[27] Any produced speech sound has to pass through a filtering structure of humans, buildings, air, etc., before a listener perceives it. The importance of this filter for a specific listening situation cannot be underestimated since, in general, 90 per cent of an aural impression is characterized by reflected and not direct sound. The architectural reconstructions of the Digital Forum Romanum project, sketched above for each of the relevant venues, form the basis of the virtual model used in the simulation of the Forum's "room impulse response".[28] Up to twenty million sound rays were sent out from the various speaker's positions into the virtual model of the Digital Forum Romanum (Figure 3.4). The acoustic properties of the source, the audience, the built space, as well as the air were considered in the simulation. These properties combine to form a specific acoustic fingerprint that each ray develops on its way through the virtual space, made up of level, colouration and time delay. In other words, any

such transmission path can be characterized by how much sound power the speech signal has lost on its way, how it has been specifically distorted by the architecture and how long it took the speech signal to arrive at a specific point. All the sound rays that reached – either directly or via reflection – the head of a virtually placed listener were taken into account for the auditory impression at this spot. At this point the third element of the equation comes in, namely the listener's head position and its physiognomy. The speech signal as filtered through the surrounding infrastructure is split into a right and a left ear impression that can, in the experimental set-up, change in real time when the user's head is turned.

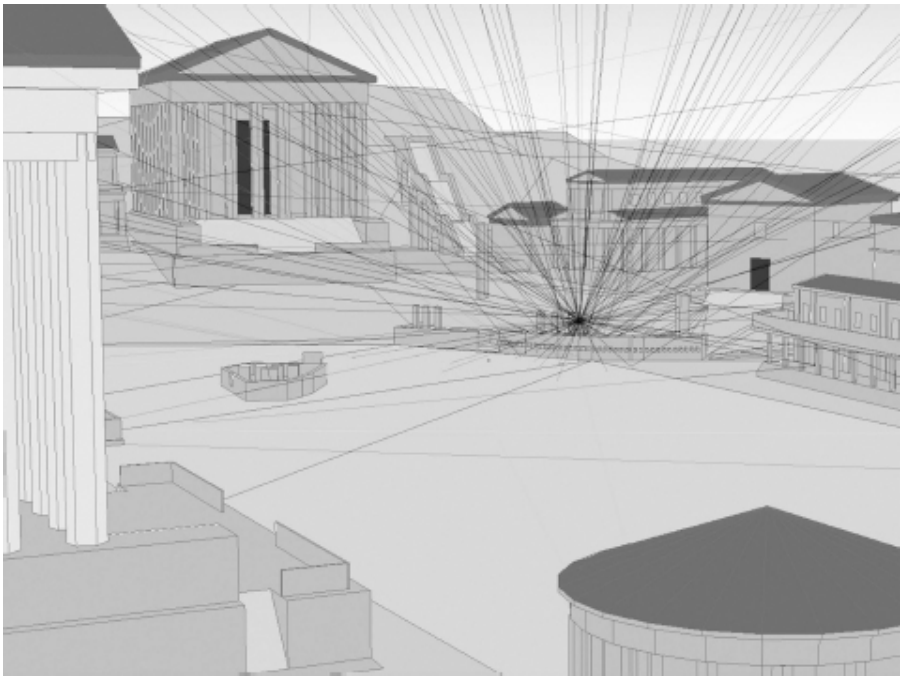


Figure 3.4 Visualization of the auralization process, with sound rays travelling from the speaker's position on the Rostra into the space of the digital model

The final element of an auralization is the noisescape that simulates the plausible background noise of whispers, air movement and rustling. The noise floor used in the auralization presented here is taken from St Peter's Square in Rome as recorded during the traditional Sunday Angelus prayer of the Pope. The number of people, the architecture and the attentiveness of the crowd assembled are comparable to the listening experience simulated in this case study.

All these elements of the signal path were processed by auralization software, making them available for an aural impression.[29] It is important to

mention that in addition to this digital simulation, real ears are needed to determine the speech's comprehensibility. To this effect we have created a listening station that, for each test scenario, pairs the aural impression obtained at different locations in the Forum with a static image generated out of the digital reconstruction of the view from the audience at that specific location. A tracker attached to the headphones allows the simulation to adapt to the turning of the listener's head. This configuration highlights our approach, in which we test and document hearing impressions to evaluate the results and calibrate parameters iteratively. The following section summarizes the results of the listening test in order to illustrate the difference between studying sensory experience from the point of view of architectural display, as opposed to an audiovisual approximation from an audience perspective. These will show that the different speaker's platforms diverge in their acoustic qualities, leading to a renewed focus on the influence changing the venues for public assembly may have had on political participation.

Results[30]

The primary intention of our simulations cannot be to capture and reconstruct the historical reality of public addresses in the Forum. The speaker's loudness, that of the listening audience, as well as further external noises would have varied considerably; climatic conditions would have additionally influenced the acoustic situation. When it comes to the acoustics of public assemblies, these considerations lead to a broad spectrum of differing historical realities. Therefore, the goal must be to recreate specific ideal situations as defined within a simple framework, allowing us to create a basic approximation of the conditions of communication. Studying in particular the distinct spatial situations known to have been used for public address enables a comparison of the acoustic qualities of each. Consequently, although the simulations fail to deliver a conclusive historical reconstruction for each acoustic situation individually, their juxtaposition allows us to draw conclusions about the utility of any particular space for political communication relative to another.

Within our simulations, we have defined two ideal scenarios: on the one hand, a "best-case" scenario, in which every member of the audience is trying to be as quiet as possible in order to hear; on the other hand, a merely adequate scenario, whereby the audience remains relatively attentive, keeping disruptive conversations and catcalls to a minimum. We know, however, that this was decidedly not always the case: the crowds were known to routinely interrupt the speaker with loud boos, applause and shouts, and to generally disturb the proceedings, especially as the Late Republic progressed.[31] Cicero

for example describes how the followers of Clodius disturbed a speech by Pompey, and how Clodius was shouted down in turn.[32] A gifted orator, on the other hand, was said to bring a crowd to silence.[33] So while the images and results presented in this chapter will show the maximum number of people who could hear the speaker, we must assume that this was often not the case. However, because we are focused primarily on the relative comparison between the three different scenarios for public address, the actual number of people who could hear the speaker is less important. Let us now turn to the first scenario in the Comitium, when the speaker addressed the crowds standing between the Rostra and the Curia (Figure 3.5).

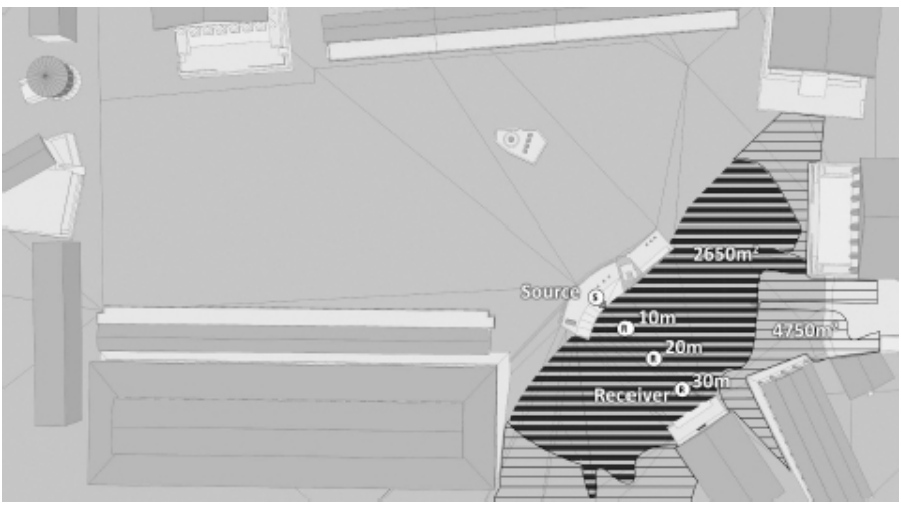


Figure 3.5 Speech comprehensibility during public address from the Rostra facing the Curia in the Late Republican period

The results of the acoustic simulation are represented here as a graphic: the darker area indicates the space in which a listener would have been able to understand very well; the lighter area includes the space in which the listener would still be able to understand, albeit only with intense concentration. In the first case, the area amounts to a total of 2650 m²; in the second, 4750 m². Allowing for four persons per square metre, this means that a speaker in the Republic would have been able to reach approximately 10,600 people easily and, under ideal conditions, an audience of approximately 19,000 people. It appears, therefore, that a speaker speaking from the Rostra towards the Curia could fill the whole area with sound well, and the central area of the Comitium very well. In addition, the general framework regarding visual communication appears advantageous (Figure 3.6): the speaker, standing on a platform that was about two metres in height, was visible to many members of the audience, even those standing further away, as the audience was gathered in an area

inclining upwards from the platform. Modern studies have shown that auditory comprehension is closely related to visual perception of the speech signal:[34] for the listener in antiquity, being able to see the speaker well must have gone hand in hand with being able to understand his speech better. The communication framework on display appears, therefore, ideal for a place of public assembly in Rome of the Early and Middle Republic, as well as the beginning of the Late Republic.

Figure 3.6 View of the speaker from an audience member standing in the Comitium at a distance of 40 m

When the speaker turns around to face the central area of the Forum itself, the situation changes. Although the open space of the Forum was able to accommodate a larger number of people than before, so that the speaker could theoretically reach a much greater audience than previously in the Comitium, there was, in comparison to the earlier situation, surprisingly no improvement in the acoustic or visual conditions. On the contrary, the space in which a speech is easily comprehensible has actually decreased to 2300 m² (Figure 3.7). With the change, approximately 9200 people of the assembly can understand a speech without great effort, approximately 1400 people fewer than in the earlier Republican situation. When we look at the space in which it is generally possible to understand a speaker if the audience concentrates, we can see that the number of people who can theoretically be reached has more or less remained the same, with a total space of 4790 m² in which 19,160 people can stand. Similarly, the conditions for visual communication did not improve noticeably (Figure 3.8). Owing to the downward inclination of the ground directly in front of the speaker's platform in the Forum, the speaker, standing on a platform of about two metres in height, was only easily visible to those

located in the front of the audience; the visibility of the speaker deteriorated considerably for audience members standing farther in the back. In comparison with the earlier venue of the Comitium, this situation represents no enhancement in either audio or visual perception of the speaker. The reason why this position was nevertheless considered more attractive is probably to be found in the fact that a significantly larger audience could assemble, even if fewer people could hear or see the speaker well.

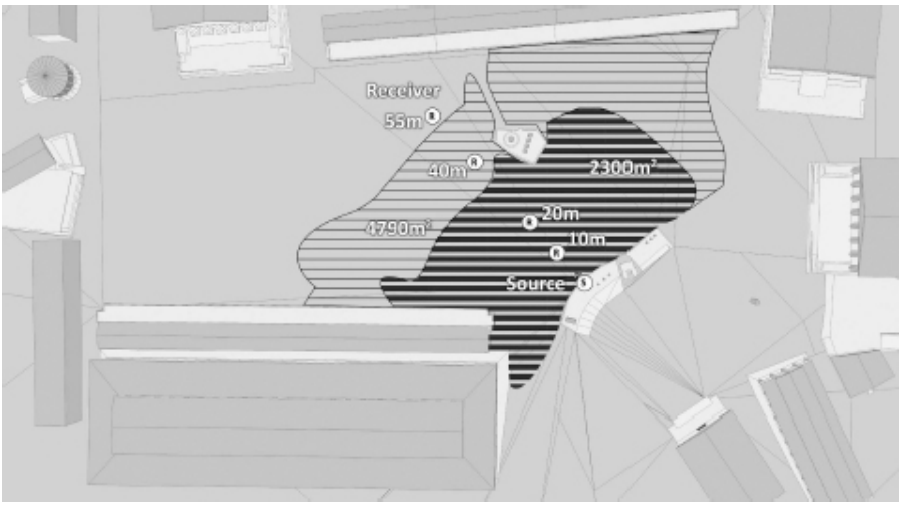


Figure 3.7 Speech comprehensibility during public address from the Rostra facing the Forum proper in the Late Republican period

Figure 3.8 View of the speaker from an audience member standing in the Forum proper at a distance of 40 m

The first act of turning towards the central area of the Forum to address the assembly, a practice that began in the mid-second century BCE, is assigned by ancient writers to several different people. Cicero attributes the beginnings of this practice to Gaius Licinius Crassus, tribune of the plebs in 145 BCE, who wanted to introduce a bill that, although tailored to curry favour with the general assembly, was objectionable to the senatorial elite.[35] However, in what is generally considered an erroneous attribution, Plutarch considers Gaius Gracchus the first to make the change and explicitly connects this to a "democratization" of the political process, whereby Gracchus faces the people as opposed to the Senate.[36] What is important is that, in both cases, the implication is that turning towards the Forum was intended to address a greater number of people, and explicitly those people who were not considered members of the oligarchy.[37] This was more than simply a symbolic gesture of turning his back on the Senate: a speaker could make his speeches accessible to a greater number of people, if only because of the amount of space now available for the audience to occupy and from which they could listen.[38] If the *contio* is to be examined solely through the lens of a staged "party-event", in which the most important persuasive element of the *contio* is to impress with the size of the crowd of supporters one can gather,[39] then in terms of sheer audience numbers, the new venue represented an improvement over the old. However, the decrease in comprehensibility shows that this solution to the need to address a greater number of people could not have been considered ideal, if the audience was meant to directly comprehend the contents of a speech. The emerging importance of the Temple of Castor as a venue for public assembly suggests that there was indeed a demand for a space in which a larger audience could not only assemble, but also be communicated with.

Taking the Temple of Castor into account reveals a completely different picture. Unlike those public addresses from the Rostra towards the open space of the Forum itself, this new position was considerably more efficacious in terms of acoustic and visual communication (Figure 3.9). The area where an audience could stand to hear and comprehend a speech increases to an area of 2950 m^2 for easy understandability to 5900 m^2 for general comprehension; translated into audience numbers, this encompasses a range of 11,800 up to 23,600 people in the best-case scenario. Independently of the absolute value of these numbers, they clearly show that this third place of public assembly represents a significant increase in the number of potential listeners who could perceive the content of the speech as compared to the number a speaker from the Rostra facing the Comitium or the central area of the Forum could reach. Visual communication likewise undergoes a significant improvement (Figure 3.10). The speaker stood on a much higher platform measuring three metres from the ground, causing him to be in view of a much larger portion of the

audience. Optimizing the visibility of the speaker in this manner must in turn have had a positive impact on the comprehensibility of his speech.[40]

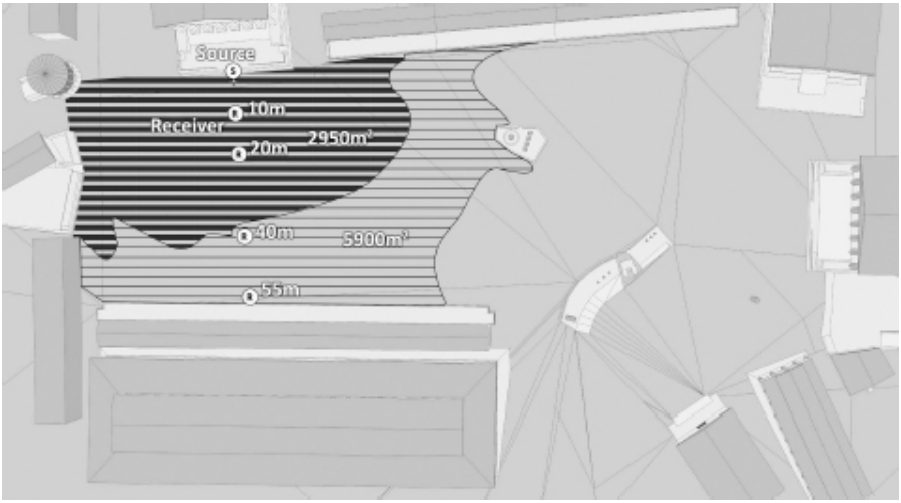


Figure 3.9 Speech comprehensibility during public address from the Temple of Castor in the Late Republican period

Figure 3.10 View of the speaker from an audience member standing in front of the Temple of Castor at a distance of 40 m

These results are especially interesting when considered within the historical context of the Late Republic. Starting in the mid second century BCE the *contio* became more and more contentious, with consensus less and less likely to be reached. (This is around the same time that the Temple of Castor is increasingly cited as a place of public assembly, although, as mentioned above, it may have been used for this purpose before the time period indicated by

literary sources.) Literary sources detail the violence and riots that began to surround public assemblies, which could conceivably be understood as a breakdown of communication between the senatorial elite and the people. Our acoustic results show, however, that this breakdown would have happened at same time that the greatest number of people could be reached. Within the historical context of the Late Republic and its increasing reliance on *contiones* and audience participation, the acoustic analysis shows a significance in the move towards the Temple of Castor that would otherwise go unrecognized if looking solely at the literary sources.

The results supplied by the simulations for these three venues for giving speeches to a public assembly provide a new foundation on which the role of oratory in political communication in the Late Republic can be considered. Most often, the assumption is that a speech was audible to a very small audience: Mouritsen, for example, speculates that the crowds gathered for the *contiones* could never have been much larger than those that gathered in the original meeting spot of the Comitium because more people than that could not have heard the speeches anyway.[41] If the ability to communicate specific contents to the assembled people is considered a prerequisite for political participation, the inability of the audience member to hear gains in importance, and Mouritsen thus concludes that the *contio* was only a means of political communication in terms of rallying one's followers and intimidating opponents through the staging of support.[42] Our results show, however, that the successive venues used represent a comparative disparity in terms of their ability to facilitate political communication as the Late Republic progresses. This perhaps indicates a desire of the Romans to improve the conditions for speech comprehension, and therefore shows how important it was for the contents of the speeches themselves to be communicated to a large audience.[43]

In our chapter we have shown how, through acoustic analysis and auralization of these speaker's platforms, it is possible to expand explanations of functional and structural changes observed in the architecture of the Forum by taking the auditory characteristics of these spaces into account. This in turn allows us to reassess our interpretations of key social and political changes in ancient Rome in light of the reconstructed sensory experience. For us, the method of simulation used here to reconstruct ancient experience is intended to be an iterative one. We see the results presented here as a jumping-off point for further research with which the simulation itself can be adjusted, tested and re-evaluated. For example, the simulation can be expanded to study the influence of visibility on speech comprehensibility, and the role that gestures and movements played in ancient rhetoric.[44] Our understanding of the sensory experience of the Forum in the Republican period can thus be extended to include, *inter alia*, a deeper awareness of the abilities of audiences to hear their

speakers and the lengths to which speakers went to be heard.

1 The authors are principal investigator (Muth) and research associates (Holter, Schwesinger) at the Cluster of Excellence "Image Knowledge Gestaltung" in the project "Analog Storage Media – Auralizations of Archaeological Spaces". The research and findings presented in this chapter are an outcome of the interdisciplinary research collaboration that the authors represent. The project group is headed by Christian Kassung (Department of Cultural Theory and History, Humboldt-Universität zu Berlin), Susanne Muth (Department of Classical Archaeology, Humboldt-Universität zu Berlin) and Stefan Weinzierl (Department of Audio Communication, Technische Universität zu Berlin). Research associates in the project are Christoph Böhm, Erika Holter, Una Schäfer and Sebastian Schwesinger.

2 Serres (1985: 119).

3 Schulze (2014).

4 Blesser and Salter (2007); for an introduction to the concept of aural architecture as developed in their book, see especially 1–11.

5 Garza et al. (2016); Cox (2010).

6 Although Gabrun and Ali (2013) show that not all fountains are suitable for this function, they acknowledge that fountains are nevertheless used for this purpose.

7 First coined by Reddy (2001: 112–37), and expanded upon by Rosenwein (2006: 17–25) (although she prefers the term emotional communities), emotional regimes is a term used to describe historically specific cultural or political norms of emotional expression.

8 Edmund Husserl (1986) conceived of this word as a central concept in his phenomenological philosophy; the term is intended both as a reclamation of the foundation of positive science and an attempt to move hermeneutics beyond interpreting subjective intentions. The term is used here to refer to the fundamental embeddedness or participation of humans within an intersubjective primordial sphere within which their experience is rendered meaningful (Schütz and Luckmann 2003).

9 See for example the at-the-time innovative work by Paul Zanker on the Roman Forum (Zanker 1972 and Zanker 1990: 79–82) or Tonio Hölscher on the collective memory on display in the Roman Forum (Hölscher 2006). A new approach to the Roman Forum as a space of experience, in this case focusing on the built architecture itself as a medium for experience, is exemplified in Muth 2014a and serves as the basis for the following considerations. For more information on the Roman Forum in general, see in addition Coarelli (1983), Coarelli (1985), Freyberger (2009) and Filippi (2012).

10 Foundation for this research project is the digital model developed by the "digitales forum romanum", a research project at the Humboldt-Universität zu Berlin in cooperation with the Cluster of Excellence "The Formation and Transformation of Space and Knowledge in Ancient Civilizations – TOPOI" led by Susanne Muth that is creating a diachronic digital model of the Roman Forum for use as an innovative research tool. Project Head: Susanne Muth; Head of 3D Modelling: Armin Müller; Project Coordination: Erika Holter and Jessica Bartz; Contributors: Dirk Mariaschk, Nikolaus Dietrich, Ulfert Oldewurtel, Jana Beutler, Lukas C. Bossert, Georgia Bousia, Dana Drüen, Henriette Engel, Maria Heine, Sophie Horacek, Maria Kames, Mai Kuginuki, Franziska Lehmann, Ilyas Özsen, Julia Preis, Rolf Sporleder, Eric Stephan and Dorothee Zombronner. Results of the project can be viewed on the website www.digitales-forum-romanum.de (English version available at www.digitales-forum-romanum.de/?lang=en).

11 For more information on the project, its approach and its goals, see Dietrich and Muth (2014); Muth (2015); Bartz, Holter, and Muth (2016). Currently the following seven phases dating to 200 BCE, 100 BCE, 14 CE, 96 CE, 150 CE, 210 CE and 310 CE are available as reconstructions and can be viewed at www.digitales-forum-romanum.de (English version www.digitales-forum-romanum.de/?lang=en).

12 The research behind the reconstructions of several of the buildings on the Roman Forum is already available online: Temple of Antoninus and Faustina (Kames 2014), Columnae rostratae Augusti (Sporleder 2014), Temple of Saturn (Holter 2014) and Temple of Caesar (Holter 2016).

13 See Muth (2014a: 303–10); Muth and Schulze (2014); Muth (2015); Bartz, Holter, and Muth (2016: 208–11).

14 For the Curia, Comitium and Rostra, see in general Gjerstad (1941), Gjerstad (1960: 217–59), Krause (1976), Coarelli (1977), Coarelli (1983: 119–74), Coarelli (1993: 309–14), Ammerman (1996), Carafa (1998), Muth and Schulze (2014: 8–10), Muth (2014a: 304–10). A summary of the research on the Curia, Comitium and Rostra, with a complete list of the literature as well as a discussion of its reconstruction, can be found in Bartz (2014).

15 Livy, History 8.14.11; Pliny, *Natural History* 34.11.

16 Cicero attributes its construction to Tullius Hostilius, the third king of Rome (710–640 BCE): Cicero, *Republic* 2.17.(31). On the archaeological situation, see Coarelli (1983: 119–60), Coarelli (1985: 11–38, 87–123, 196–98, 233–57), Ammerman (1996: 124), Carafa (1998), Ammerman and Filippi (2000: 35–7), Cifani (2008: 113) and Hopkins (2016: 48–53, 88–9). If the erection of various monuments on and around the Rostra as conveyed by the literary sources are any indication, the ancient texts also support the existence of these structures in the Early Republican period: e.g. the Twelve Tables, set up in 442 BCE (Diodorus Siculus, 12.26.1) or the ships' beaks from the battle of Antium added in 338 BCE (Livy, History 8.14.11; Pliny, *Natural History* 34.11).

17 Muth (2014a: 296–7).

18 Cicero, *On Friendship* 96; Plutarch, *Caius Gracchus* 5.3. Further discussion and sources below.

19 Although this renovation is not mentioned in literary sources, it can be dated to the second century BCE due to the use of *opus caementicium*. On the pre-Metellan renovation of the temple with the addition of a tribunal and a discussion of its dating, see Nielsen and Poulsen (1992: 80–6).

20 The first is that of Scipio Aemilianus, probably held in 142 BCE (Fest., 362L). Other examples include the passing of Caesar's first agrarian law (Cassius Dio, 38.6) and a *contio* by Octavian (Appian, *Civil Wars* 3.41.).

21 See Nielsen and Poulsen (1992: 87–117) on the Metellan temple; for the temple in the Late Republican period, see Sumi (2009: 169–73). For a general introduction to the Temple of Castor and a more detailed account of its reconstruction with a list of relevant literature, see Muth (2014b).

22 For some examples of this kind of approach, see Zanker (1972), Hölscher (2001), Knell (2004) and Hölscher (2006). This idea is often pushed to the extreme when interpreting Caesar's renovation of the Curia and relocation of the republican Rostra: although both continue to exist, albeit in different form and different location (although always on the Forum), the focus is on the disappearance of Republican structures in favour of Caesar and his own political aims (Zanker 1972: 7, Coarelli 1985: 234, Kolb 1995: 254, Kissel 2004: 314, 318–19;

Knell 2004: 31, Freyberger 2009: 55–6 and Sumi 2011: 209–10).

23 For example, Kolb (2002: 243–9).

24 See Muth (2014a) for an in-depth discussion of this functional aspect of architecture, specifically for the Roman Forum.

25 On the *contio*, see Taylor (1966: 13–38), Pina Polo (1996), Mouritsen (2001: 38–62), Morstein-Marx (2004: 7–11) and Tiersch (2009).

26 For an introduction to virtual acoustics and auralization techniques, see Vorländer (2008). Weinzierl et al. (2015) shows in a concrete example how these methods can be used in historical simulations.

27 Larkin (2004: 291). Although he develops his definition of infrastructure with reference to piracy, his general concept of infrastructure is useful in this context as well because it integrates much of the earlier writings that have touched on infrastructures from specific perspectives, such as Lefebvre (1991) and Graham and Marvin (2001).

28 The room impulse response, which serves as the basis for interpretations of room acoustics, records the reaction of a certain architectural configuration to an excitation with an ideal impulse. It displays the specific decay of energy over the course of time of an incoming signal mirroring the individual acoustic fingerprint of a specific space for a certain position (Vorländer 2008: 93). The following description specifies only one of the main methods in use to calculate a room impulse response. These methods are usually combined in acoustics software (Ahnert and Tennhardt 2008: 244–8).

29 A sample auralization of Cicero's speech (in Latin) is available for download at www.routledge.com/9781138481664 under the heading 'eResource' for readers to listen to themselves. The speech can be heard from the perspective of an audience member standing in the Comitium at a distance of 20 m. Please note that the auralization is tailored to individual perception, so use headphones when listening to the file.

30 Earlier publications of the research results can be found in Muth (2015) and Bartz, Holter, and Muth (2016: 208–11).

31 Mouritsen (2001: 47–8) and Morstein-Marx (2004: 119–59).

32 Cicero, *Letters to his Brother Quintus* 2.3.2.

33 Valerius Maximus, Memorable Doings and Sayings 3.7.3, 6.2.3; Cicero, *Letters to Quintus* 2.3.2.

34 Most famously with the discovery of the "McGurk effect", where the combination of the audio signal of one syllable with the visual articulation of another is perceived by listeners as a third, different syllable, thereby proving the existence of a connection between hearing and seeing during speech perception (McGurk and MacDonald 1976). Studies arising out of this finding that speech comprehension has both an audio and a visual component focus mainly on the improvement to speech comprehension provided when a listener can see the speaker's face and facial movements; see for example Macleod and Summerfield (1987), Grant and Seitz (2000), Munhall et al. (2004), Schwartz et al. (2004) and Ross et al. (2007).

35 Cicero, *On Friendship* 96. Cf. Taylor (1962: 25).

36 Plutarch, *Life of Caius Gracchus* 5.3. Cf. Pina Polo (1996: 146).

37 Although Cicero later uses the resulting set-up as a metaphor for the primacy of the Senate, as the Curia watches over the Rostra: Cicero, *For Flaccus* 57.

38 Taylor 1966 (23–5) conjectures that, despite the evidence of Cicero and Plutarch, the speaker never spoke towards the Comitium and Curia, because the people only had enough space to assemble in the Forum itself. The results of the auralization prove her concern inconsequential, as similar numbers of people could assemble in both cases in order to actually hear the speeches given.

39 As in Mouritsen's (2001: 38–62) description of the *contio* in the Late Republic.

40 The performative aspect of ancient rhetoric should not be forgotten in this context: the Late Republican rhetorical treatise *Rhetorica ad Herennium* for example details hand gestures to be used while speaking (3.26–7). Although never explicitly referred to as a means of increasing auditory speech comprehension, the connection between audio and visual perception mentioned above (n. 34) makes this an interesting avenue for further research. For more on the role of gesture and performance in ancient Roman rhetoric, see Aldrete (1999: 3–43), Hall (2004), Corbeill (2004: 109–16, 128–33) and Morstein-Marx (2004: 270–3).

41 Mouritsen (2001: 25–6). See also for example Millar (1998: 223–4).

42 Mouritsen (2001: 38–62).

43 As Morstein-Marx (2004) suggests.

44 Corbeill (2004: 131–2) for example concludes in his study of gesture in the public space of the Forum that it was not necessary to hear a speaker in order to be persuaded by him.

4
Vocal expression in Roman mourning[1]

Valerie Hope

As Dido died, Carthage erupted in chaos, marked by sounds of mourning that reached celestial heights: "The palace rang with lamentation and groaning and the wailing of women, and the heavens gave back the sound of mourning" (Virgil, *Aeneid* 4.667–8).[2] The sonic aspect is striking, since it was laments, groans and shrieks that signalled Dido's death, and Anna, summoned, who called her sister's name and gave voice to her own sorrow.[3] Virgil's imaginary description of grief-stricken Carthage may have differed from how mourning was enacted in ancient Rome; the extremity of the reaction and the ululations of women evoked a foreign otherness, a lack of self-control and female excess. (For more on Virgil's construction of sonic environments in the *Aeneid*, see Butler, this volume.) Nevertheless, the sounds of mourning and varied forms of vocalizing grief would have been familiar enough to the Roman reader. Across literary genres, sound was central to the depiction of mourning and was represented as a major (and perhaps the most important) aspect of its performance. Mourners spoke, groaned, shouted, wailed and shrieked; they delivered speeches, laments and songs; from the deathbed to the pyre, the bereaved were to be heard. Furthermore, mourning noises could be described as resounding, echoing, and spreading far and wide;[4] and their extent, or conversely their absence, could be employed as a measure of excessive or insufficient suffering.[5] Mourning sounds could be compared and even become competitive.

This is not to claim that sound was the only sense employed and stimulated in the performance of mourning. Mourning was an embodied, multi-sensory experience that deliberately inverted normative sensory expectations as a way of advertising the liminal and polluted state of both the corpse and the

bereaved. Mourners looked, acted, smelled and sounded different from other people, creating an environment that was specific and striking.[6] The rationale for evaluating sound in this context is not intentionally to isolate it, but to acknowledge its centrality to the overall performance and to understand further the expectations associated with mourning.[7]

Gender is particularly relevant here. Gendered mourning roles have been a major area of investigation within studies of ancient ritual, including of that most vociferous form of mourning, the lament.[8] The argument has been made that ancient women were seen, and above all heard, in funeral rituals, more than in other public contexts. Mourning sounds were highly gendered: female mourners were noisy, whereas male mourners were largely silent. However, the analysis of different types of mourning sounds undertaken here suggests that this sharp dichotomy may require some modification.[9] This chapter investigates who was making what sounds, when, and how, and how these conformed to stereotypes and expectations, and not just those centred on gender. The intention is to understand the range and purpose of the sounds mourners made, and the emotional, practical, ritual and display aspects of those sounds.

Evidence and definitions

Defining mourning and mourners is not straightforward. In any culture questions emerge about how mourning differs from grieving and whether mourning is a prescribed societal role or a matter of personal choice. Here the focus will fall less upon the underlying emotional aspects (grief), and more upon public expression (mourning), from the moment of death, through the display of the body (*collocatio*), the procession (*pompa*), to the disposal of the corpse. This period encompassed expected behaviour from the bereaved, including a range of auditory elements. Many of the mourning actions would have mirrored the grief of those involved, but this connection cannot be assumed. Roman mourning could be a performance and, during the public rituals, commanded an audience. Nor can it be presumed that the experience of all mourners, the identity of mourners, the audience for mourning, and the impact of mourning upon that audience were static across and throughout the rituals. Status, wealth, age and gender, of both the deceased and the bereaved, affected how mourners were defined and acted; so too did these vary over time. In addition, household slaves and hired mourners could also be present, the latter paid to provide tears and laments and to encourage others to copy or join them. Aspects of Roman mourning, including, perhaps especially, its sonic elements, were staged, complicating for some mourners the link between grief

and mourning.

Piecing together the evidence for how Roman mourners vocalized grief (real or not) is a complex process, since there are few "ear-witness" accounts. Some descriptions of the funerals of famous Roman citizens that include auditory dimensions survive, but these are generally skewed towards the delivery of eulogies.[10] In addition, there are numerous fictional accounts of people struck by grief, lamenting over and tending dead bodies. Such accounts are rarely detailed, are often centred on characters suffering extreme or unusual losses, and are mainly found in epic poetry, tragic plays, satire and philosophical writings. In the literary tradition, there were certain things that a mourner was expected to do and vocalise, adding up to a checklist of distressed behaviours that served to signal a state of mourning. Ancient authors drew on this repertoire to create dramatic, moving and sometimes shocking or humorous scenes. Some claimed that they were reflecting a social reality, but generally accounts of mourning were rooted in poetic, mythic and heroic pasts, and employed traditional and inherited (most often from Greek literature) motifs of how a mourner should behave.[11]

The literary evidence, complemented by a few visual depictions (see below), is limited by form, context and a long history of inter-textual borrowings. The following discussion investigates a range of sounds, using a variety of sources, predominantly in Latin, and dating mainly from the first century BCE through the second century CE.[12] Many (if not the majority) of these sources are fictional accounts; nevertheless, it is still valuable to look at the available evidence collectively (regardless of genre or historicity), both to see relationships between different representations and because even what can be dismissed as fantasy and cliché may have shaped expectations. It may not be possible to establish definitively, for example, how often Roman mourners wailed, but it is possible to explore how such sounds were characterized, with whom they were associated and in what contexts. Mourning was not an automatic emotional response but, rather, something that was formed by the surrounding tradition and culture, including its literary and visual aspects. The likes of tragedy and satire may not be wholly reliable witnesses, yet they formed part of the cultural backdrop against which real mourning was performed.

The sounds of mourning

1 Silence

Silence in mourning could be seen as unusual, as an unnatural suppression of

emotion or as a deliberate, even sinister, oppression of free action.[13] Yet silence did have a place, and often to powerful effect. The inability to produce sound was associated with shock, and the witnessing or announcement of a death could render individuals speechless. For example, Statius imagines a mother unable to speak or cry on first discovering her son's body.[14] Such silent stillness was momentary and served as a sharp contrast to the noise that would follow.

The performance of mourning by some also demanded the vocal restraint of others. If laments from certain mourners were to be appreciated, other mourners had to lament quietly; if speeches were to be heard, wailing had to stop or could only interrupt at appropriate moments. Not everyone could be as equally vocal at all times, and the impact of the sounds of mourning was intensified by the relative silence of some participants and of any wider audience.

The bereaved might also suppress mourning sounds. There were many elite men, mainly of Republican date, who allegedly accepted their grief without fuss, and this acceptance implied no loud outbursts. Seneca the Younger toyed with the issue of sounds and hearing in his description of how Pulvillus (consul in 509 BCE) received the report of his son's death. In the midst of dedicating a temple, Pulvillus pretended not to hear the news and continued; the only sounds he uttered were the words of the appropriate ritual, without a single groan (*gemitu non interrumpente*). Once home Pulvillus did give voice to loss, but soon he returned to his public duties with no outward sign of grief.[15] Elite men were idealized for the control they exercised over their voice and its uses. Vocalizing pain and suffering was of questionable merit; silence, as an act of self-discipline, could become a symbol of virtue.

2 Speech

Although little referenced in stock descriptions of mourners, talking and conversation would have been essential, both from a practical perspective, such as instructions for the funeral, and from an emotive perspective, in terms of articulating grief. Many laments were probably primarily spoken, although such speech, when part of ritual, probably entailed set features in content, rhythm and diction, differentiating it from everyday speech, although so few real laments survive it is difficult to be certain (see below).[16] In the funeral processions of the elite, especially during the Republic, the role of actors wearing masks (*imagines*) of male ancestors, who could speak in part, and mimes, who might crack jokes, can also be noted.[17] At the emperor Vespasian's funeral an actor imitated the emperor's gestures and words, including his jocular parsimony, even suggesting that the body be thrown into the Tiber to

save expense.[18]

For the elite of Rome, a speech (*laudatio funebris*) was given from the Rostra in the Roman Forum, following a procession from the home of the deceased. In the Republic such eulogies were an opportunity for the family to capitalize on the death by celebrating its ancestry as well as the dead man, all through the voice of a surviving male member of the family, who thus represented its future and continuity.[19] The content of these posthumous panegyrics for Rome's great men were rarely preserved.[20] The speeches probably focused on the virtues of the deceased, illustrating these through his career, while making reference to earlier illustrious ancestors.[21] Funeral speeches were supposed to be unadorned and brief and have a melancholy and subdued tone.[22] However, the eulogy was an opportunity to display rhetorical skills, and for young men it could be a first appearance on the Rostra and thus significant for their subsequent reputation.[23] Eulogies could be published via inscription or manuscript circulation, and/or kept in the family records, as a means of commemorating the dead and, more broadly, the fame of the family.[24] In times of turbulence, eulogies could be used to political ends and elicit a dramatic response. The funeral of Julius Caesar was the most infamous example, when Mark Antony incited the crowd by listing Caesar's many successes and showing his blood-stained clothes.[25] This was an extreme case, but it still suggests that the crowd was not the passive recipient of eulogies, which could be punctuated by wails, shouts and cries. Under the emperors, the power of these speeches was somewhat curtailed, since members of the senatorial elite were eulogized not always by a male relative, but by a fellow leading citizen.[26] This shift, coupled with other changes, such as a reduction in use of the *imagines*, dented the male, familial and political clout of funerals, with the most prestigious forms of funeral display becoming the preserve of the Imperial family.[27]

From the late Republic, eulogies could be delivered for prominent women but were never made by them.[28] For the majority of the population, regardless of gender, the funeral procession did not head for the Forum, but straight to the cemetery, where a speech may have been made at the pyre or graveside, although there is little direct evidence for this. The content of such tributes, who they were delivered by, and to whom, is uncertain, but they may have focused on the virtues of the deceased or have been blended with aspects of lament.

3 Lament

Lament allowed the bereaved to articulate and complain about their loss while also praising and appeasing the dead.[29] Lament took different forms: repeated

statements or shouts or cries of loss and suffering, *ad hoc* expressions of extended complaint, formal laments of prescribed structure performed at key ritual moments, and literary laments, found, for example, in tragedies or poetic consolations, which may have overlapped with all the above. Numerous examples of literary laments exist, whereas there is little evidence for the content and format of formal laments that were part of the structured rituals.[30] In addition, there are many references to more generalized forms of lamentation, spoken and shouted, that followed a death, although these references often provide few details of what precisely was involved.

It is primarily in tragedy, epic and poetic consolations that the words of ancient lament are now found, and those of the Roman period are heavily influenced by Greek prototypes. These literary laments mainly represent individual voices; most often, although not exclusively, these are spoken or sung by female family members.[31] These utterances are made over the bodies of those the mourners loved, and they are filled with praise and rhetorical questions addressed to the deceased. At the same time, the bereaved may explore their sense of abandonment, wish for their own death, or call for revenge.[32] These literary laments suggest how bereaved family members grieved and expressed loss, but their structural relationship to ritual laments is uncertain. Formal ritual laments, whether said, sung or chanted, may have contained formulaic, repetitive and ritualistically essential elements, known by lament experts (e.g. the *praeficae*), which are now largely lost to us.

Formal laments were expected at the *collocatio*, at the *pompa* and after the *laudatio*. Traditionally such laments were led by senior female members of the family, and a formulaic structure may have been passed between generations. An alternative for the well-to-do was to pay professional lament performers. Limited references survive to so-called *praeficae*, women hired to lead the praises of the dead at the house.[33] *Praeficae* and other paid mourners were predominantly women of servile origins whose use may have increased from the late Republic as the undertaking trade become more formalized.[34] If so, this suggests that the female voices heard at funeral rituals were not those of high-status women exploiting an avenue for public display but those of low-status, marginalized and disparaged servile helpers, although the responsibility for organizing these helpers would have been retained by the women of the household.[35] The Roman elite *matrona* might don black for extended periods, but this appearance was not necessarily matched by her voice; she might look like a traditional female mourner, but not sound like one.

The *nenia*, a chant or song to guide the dead to the grave, performed after the *laudatio* or en route to the cemetery, could also be led by female professionals. Seneca's mock funeral of the emperor Claudius includes the performance of a *nenia*, which declares the death, calls for mourning and

praises the deceased. Claudius is imagined as listening to the *nenia*, a reminder that he is dead and so should willingly leave this world.[36] A *nenia* (and its female performers) could be characterized as trivial, inane, shameful and repetitive, but the simplicity of the *nenia*, owing to its processional context and participatory function, should not belie its ritual significance.[37] Nor were all aspects of ritual lament monopolized by female professional mourners: they may have been present not only to lead lament but also to encourage others, including the family, to join in.[38]

Lamentation, in a more generalized sense, was what all mourners did and thus encompassed a great range of sounds (and, implicitly, gestures) to express and complain about loss. Cicero defined lamenting as a form of distress accompanied by wailing (*lamentatio aegritudo cum eiulatu*).[39] Such lamentation recurred throughout the rituals, and was often characterized as primarily a female activity; for example, after the battle of Cannae it was the women of Rome who were pictured as crying and lamenting.[40] Yet this more generalized form of lament could be practised by men: Livy pictured a man, having unknowingly slain his own brother, breaking into loud laments, and Statius described himself as lamenting for his father.[41] Men indulging in highly emotional laments, including in epic and tragedy, could come in for some criticism.[42] Nevertheless lamentation (as an imprecise catch-all for complaining and sorrowful sounds) was expected behaviour, and not just by women.[43] Not all men were silent in their grief.

4 Groaning

Mourners were associated with a range of low-level and inarticulate sounds such as sobbing and sighing, but the term most used was *gemitus* (noun) or *gemere* (verb), suggesting groaning.[44] This sound was also made by angry people, as well as people who were wounded, in pain or at the point of death.[45] The term was also associated with animals, especially cattle and lions, revealing its natural and instinctive, even animalistic, connotations.[46] It was considered natural, and even unavoidable, to groan when in distress. Seneca notes, "Now all the things which cause us to groan or recoil, are part of the tax of life – things, my dear Lucilius, which you should never hope and never seek to escape".[47]

In literature, a range of people were heard to groan in bereavement, both men and women. Cicero associates piteous groaning with weakness and womanish weeping (*fletus muliebris*), but also acknowledges that in grief a man might groan. In several of his speeches, he uses the groans of citizens, good men and the Roman people to summon a rhetorical sense of grief and despair at the decline of the Republic.[48] Propertius has Augustus groaning at

the death of his daughter's half-sister, Cornelia.[49] Statius characterizes mourning groans as pious, and Tacitus imagines Roman senators crying and groaning at the death of Drusus and further groaning at the return of Germanicus' ashes.[50] Petronius suggests that groans of mourners were a shared language: "a funeral unites the unhappy, bereaved parents groan together, and the hour makes them equal".[51] These literary references to groaning remind that the expression of mourning could be related to status and respect as much as prescribed gender roles. Men could be expected to vocalise grief for social superiors, sometimes even social inferiors, as part of status-driven responses.[52] How these sounds were interpreted, either negatively as weakness or positively as accolade, varied and could be manipulated by commentators.

The sound of groaning was made at various points in the rituals, most often at the moment of knowledge of a death, but also as the corpse was laid out, at the funeral and after the funeral.[53] The moaning, groaning, mumbling or complaining implied by *gemitus* could be loud, or something that was barely audible, a sign of supressed emotion, or something that, like tears, could be held back.[54] Not all groaning was inarticulate, and the sound could be interspersed with or lead into speech.[55] *Gemitus* was also readily linked to other key mourning sounds such as lament, but most often *gemitus* was associated with tears and crying.[56] As such, groaning was something that mourners were expected to do and thus came to signify the state of mourning overall.[57]

5 Shouting

Associated with the expected anger brought by grief, mourners could be described as shouting. Livy's account of the aftermath of the Battle of Cannae records the deafening shouts of lamenting women.[58] Apuleius in describing the false mourning performance of Thrasyllus (who had murdered the deceased) imagines him as shouting, crying and lamenting.[59] Statius also places shouting alongside weeping, as the author pictures himself contending with others in a noisy pyre-side display.[60] In these cases the shouts blend with lamenting and wailing and form part of the overall mourning performance.

The repeated shouting of the name of the deceased may have been a distinctive feature of mourning. The term *conclamatio* is preserved by Servius, who suggests that washing the dead body in warm water and calling out to it had its origins in ensuring that death had occurred. Servius indicates that such calling out could continue until the pyre was lit.[61] There are few other references, and these largely focus on the time of death. At the death of Lucretia it was her husband and father who called out as she died.[62]

Ammianus Marcellinus uses the term "final shouts" (*conclamata suprema*) at the deathbed, and both Fronto and Ausonius characterize the practice as something that the family did at or near the time of death.[63] Lucan also associates *conclamatio* with the deathbed, with the shouting out expected once the initial shock of the loss had been overcome.[64] By contrast, Apuleius places the *conclamatio* later, at the time when the corpse is being removed from the house.[65] Although the *conclamatio* could be performed by women, it was not restricted to them and was most often broadly associated with members of the household.[66] When used for contexts outside the home, *conclamatio* evoked a more general sense of mourning, linked with weeping and lament, and was often performed by mourners *en masse*. For example, the mourners of Germanicus displayed their grief through *lacrimae* and *conclamationes* (tears and shouting) which may imply loud cries, rather than address to the dead specifically.[67]

6 Wailing and howling

Crying could be characterized as having a clear auditory element; for example, Agrippina on leaving a rebellious army camp was accompanied by "the sound of weeping".[68] In particular, the term *ploratus* implied loud crying.[69] Seneca, when discussing how to mourn for a close friend, differentiates between tears and demonstrative crying, stating, "we may weep, but not wail".[70] Noisy crying could have negative associations; Cicero noted the disgraceful wailing (*ploratus turpissimos*) of injured raw recruits, compared to the battle hardened, courageous veteran.[71] Men that wailed were seen as weak, whining or silly.[72] Wailing, in mourning and situations of distress, was most often associated with women, and sometimes children.[73] But such crying was not wholly feminine, since it could be used to convey a generalized state of distress; crowds, and not just of women, wept and wailed, including in mourning.[74]

A more distinctive sound, and one with definite feminine connotations, was the howl, shriek or ululation. The words *ululatus* (noun) and *ululare* (verb) were used to describe the howling of wolves and dogs, and had a supernatural or eerie element, since ghosts and witches were thought to ululate.[75] There was also an alien or foreign dimension to ululation seen in its use to describe ecstatic worship and barbarian war cries.[76] Shrieks caused by shock, panic or pain were sometimes associated with women.[77] Women could also be pictured as ululating in distress, when under attack, abandoned by lovers and in times of grief.[78] In the *Aeneid*, the mother of Euryalus shrieks (*femineo ululatu*) at the news of her son's death. Elsewhere in the poem women's shrieks are heard as part of the lamentation of the dead.[79] However, such references to women ululating in mourning were rare, and they mainly feature in epic poetry and/or

evoked non-Roman contexts.[80] Quintus Curtius Rufus, for example, has Persian women shrieking and screaming when they believed King Darius dead.[81] There are only a few instances where the term is employed of men. In Virgil, military mourners circle a pyre ululating, and after the Battle of Trasimene, Silius Italicus imagines the citizens of Rome shrieking in sorrow, without distinguishing between men and women.[82] Elsewhere, however, Silius Italicus stresses the feminine overtones to such sounds since at the fall of Capua men filled the air with "womanish shrieking".[83]

Early legislation to control funeral expenses suggests that paying women to shriek at funerals could occur and was frowned upon, and Cicero certainly viewed the practice as unacceptable.[84] In general, whereas wailing might be tolerated, to shriek, scream or howl in an ear-piercing expression of grief was an imagined female act and one only performed in extreme or unusual situations.

7 Music

Song may have featured as an important part of the performance of lament. Predominantly female voices, either singly or collectively, may have sung prior to and during the funeral procession.[85] Whether specific laments, such as the *nenia*, were spoken, sung or chanted, is, however, unclear.[86] Musical instruments could also accompany, complement or replace the human voice.

The moment of death may have been signalled by a trumpet blast. Propertius and Ovid refer to the "funeral trumpet", and Persius imagines trumpeters arriving shortly after the moment of decease.[87] It is more likely, however, that musicians were engaged once the corpse was laid out. At the *collocatio*, flutes or pipes (*tibia*) would have been more suitable accompaniments to the laments performed in the interior of the house. A relief from the tomb of the Haterii (Rome: late first century BCE) depicts the *collocatio* for a woman and shows a female musician playing a pipe (*tibia*), who is seated in front of a second female figure positioned at a lectern, as if reading or singing a lament.[88] Pipes may also have accompanied the *nenia*, performed after the *laudatio* or as the procession approached the cemetery.[89]

A range of instruments was associated with the funeral procession, and may have led the cortege. A relief from Amiternum (late first century BCE), the only surviving depiction of a *pompa*, has a band at the front, consisting of seven male musicians, four playing pipes, and three horns.[90] A comic description of the emperor Claudius' funeral also had trumpeters (*tubicines*) and horn players (*cornicines*).[91] *Tibicines*(pipe players) were present in the Forum for Julius Caesar's funeral, and Petronius's Trimalchio summoned *cornicines* to play at his mock funeral.[92] Aulus Gellius suggests that there may

have been a specific funeral trumpet, which gave its name to funeral bands (*siticines*), but a distinctive instrument is not elsewhere referenced.[93] The *tuba* – trumpet or horn – was most often present in bands or as a lone instrument and could be viewed as having a mournful aspect.[94]

Early legislation in the Twelve Tables sought to restrict expenditure to ten pipe players at the funeral, indicating that the number of musicians could and did exceed this.[95] The level of sound made by a large band would have drowned out human voices, but if placed at the front of the procession, it served to announce the funeral.[96] Pipes may have primarily accompanied the human voice, whereas horns provided loud signalling and attention-seeking blasts.

Mourning sounds in context

Funeral ritual consisted of a variety of sounds, incorporating the full range of the human voice – singly, in unison, mumbling, speaking, singing, chanting and shouting – and a variety of musical instruments. The available evidence, despite its limitations, suggests when and by whom these sounds were made.[97] It should be noted that the sounds were both static and mobile, located within interior and exterior spaces, and in both structured spaces (e.g. the Forum) and less controlled locations (e.g. streets), all of which would have affected aspects such as volume, audibility, background noise, audience and the integration of sound with other senses.

As discussed above, the moment of death could be accompanied by a shocked silence. This was a contrast to the cacophony of sounds that followed and marked a moment of transition for both the dying and the survivors. The death may have been heralded by a trumpet blast, although evidence for this is limited. The *conclamatio* then began: a calling of the name of the deceased, to confirm death. This was accompanied by sounds of lamentation, wails and groans from the relatives of the deceased and slaves of the household. The *conclamatio*, and generalized lamentation, continued as the body was washed, perfumed and laid out. The body could then be displayed in the *atrium* of the house. It remained attended at all times and was ringed by sound.[98] By this stage, hired female professionals may have been summoned, and these could sing or chant laments, the latter containing formulaic elements and details pertaining to the life of the deceased. A pipe player could be present to accompany these laments. Family and household members, especially women, might join in, perhaps chorusing some of the refrains, or they may have spoken their own laments. As the *collocatio* progressed, the *conclamatio*, wails, groans and shouts made by family and hired mourners filled the atrium. The

work of this mourning noise could be shared, with periods of silence from individuals as they rested their voice or allowed others to vocalise their grief.

On the day of the funeral the body was carried from the house to the sounds of wailing, groaning, shouting and lament. The *conclamatio* may have gained new significance, as the name of the deceased was called as the corpse left the home for the final time. A hired female mourner (*praefica*) may have performed a praising lament outside the house. The procession then made its way to the Forum (if a eulogy was to be delivered) or went directly to the cemetery. At the head of the *pompa*, a band played loud music. For funerals of the elite, actors and mimes impersonating the dead ancestors, some conveyed in chariots, may have headed the procession, although such displays were less usual in the Imperial period, except among the emperor's own family. Professional mourners would have followed the band, singing or chanting laments to the music, or wailing. After the corpse came the family members, men and women walking together, who could choose to vocalise their grief or to remain silent. The procession wound its way through the streets, with bystanders encountering passing sounds from instruments, lament and the sight of the silent corpse. Some of the bystanders would have joined the end of the procession, at some distance from the band and the hired mourners. The acoustical volume, and experience of this by those present, would have been affected by both the built and natural environment: factors such as the width of the streets, the height of buildings, the weather and the seasons.[99]

Once the procession arrived at the Forum and the family had arranged themselves near the Rostra, silence fell for the eulogy. This was delivered by a lone male voice. For those situated at the back of a large crowd, it may have been difficult to hear the speaker (see Holter, Muth and Schwesinger, this volume), and equally it may have been challenging for the speaker to hold the crowd's attention. The crowd, hired mourners and relatives, may have shouted and wailed in response to the speech and aspects of its content, which praised the deceased and his family. The *laudatio* was followed by the performance of songs that praised the deceased and lamented the death, while the procession formed again. There may have been some changes in the procession's constitution, with not all those who had attended the initial *pompa* and the eulogy accompanying the bier to the cemetery.[100] The noise level from the band and professional mourners may have been more muted during the *nenia*, a soothing dirge to the sound of pipes, its repetitive elements allowing the content to be heard and understood by all those that the procession passed. For the family mourners, wailing, groaning and shouting may have intensified as the final farewell grew near. Once the pyre or grave was reached, silence may have been demanded, if some final words or a speech (if it had not already been delivered) was made. The name of the deceased may have been called out

once more as the pyre was lit or the tomb closed. The family may have continued to wail, shout and groan around the pyre, while other attendees were dismissed. When the family returned home, rites of purification were followed by nine days of rest and limited social activity. There were no more laments, hired mourners or musicians in the atrium. The family mourners might continue their groans, wails and lamentations behind closed doors, but the public noise was over.

Mourning was not monotone but punctuated by distinct phases and sounds. The formal laments and the funeral band, for example, had their set places. At certain points, such as when the body left the house, or as the bier reached the cemetery, the sounds may have reached a crescendo. Overall, how the funeral and individual mourners sounded was orchestrated and organized. Sounds were both verbal (*conclamatio*, *laudatio*, lament and *nenia*) and nonverbal (groaning, wailing, shouting, shrieking and lamentation), with the latter providing a soundscape in which the former were situated.[101] Sound was an essential structuring principle of the rituals.[102]

Functions of mourning sounds

Roman mourning was noisy.[103] From the moment of death, the corpse was encircled by sounds, and these performed certain functions. The sounds were signals of distress and anger (whether real or feigned). Lamentation, wailing, groaning and shouting voiced and made public inner torment and suffering. These were expected responses, and as such they were codified and even standardized into a performance. Mourning demanded the articulation of grief through vocal sounds, which mourners had to make themselves or pay others to make on their behalf. The sounds were deemed both natural and essential. Without them the family could be judged as not performing the rites properly, of not respecting the dead person sufficiently.[104] Women played an important public role in representing this familial grief and, at times, state or community grief, and they were expected to remain "in mourning" for longer than men.[105] The fact that male authors could criticize and caricature female vocal expression, alongside some attempts to control it, suggests that there was an awareness of its importance.[106] For the better-off, funerals also displayed the wealth and status of the family, and although early laws curtailed the number of musicians and wailing, these were probably little enforced.[107] However, to note the display aspects of mourning sound does not mean to suggest that all the sounds were false, or female. For many, the vocalization of grief was an instinctive (however much also culturally shaped) response, and one that could relieve suffering. The communal aspects of expressing grief together,

collectively sharing, and making and experiencing sounds could be genuinely cathartic for some, if not for all.[108] Sounds made familiar by earlier bereavements, such as refrains of lament and music, may also have acted as triggers for the release of emotion.[109]

Noise also marked the mourners as different: their bereaved status and proximity to the corpse placed them in a liminal and polluted state.[110] Along with other markers, such as dress and gestures, sounds emphasized this. Mourning could mark the reversal of usual vocal expectations: for example, individuals, especially women, who were usually expected to be quiet in public, shouted and wailed. Mourning sounds were also distinctive, ear-catching and deliberately disturbing, providing a set of auditory cues for both the bereaved and non-bereaved. On the one hand, the sounds warned others to keep their distance, helping them to avoid death pollution, but on the other, they signalled the pain and vulnerability of the bereaved, inviting sympathy and support.

Mourning sounds were not, however, only directed at an external audience, since many of them were centred upon the deceased. The noises served to protect the corpse, to ensure its safe transition, rather than its exploitation. The sounds announced that the body and spirit were being attended to and cared for, and their volume may have been imagined as deterring unwanted attention, for example, from witches.[111] In religious terms the sounds created a sacred or special space around the deceased. The dead person was also talked about, sung of and shouted to, named, asked questions of and praised. The corpse remained an unresponsive recipient, confirming physical death, while the spirit was encouraged to move on by remembrance of the life completed.[112] Recent work on the similarities between birth and death rituals emphasize the symbolism within the rites of the dead being born into a new life, as well as the importance of women as "midwives" to the dead.[113] Singing, chanting and talking to the dead in a soothing, almost childlike fashion was integral to this "birth", but more generally the crying and wailing associated with death was also akin to the sounds made by an infant.[114]

The sounds of Roman mourning filled several functions, facilitating communication between mourners, the household and the wider community, and the living and the dead. The vocalization of grief announced the death, evoked empathy, expressed shared suffering and could symbolize status, but it also served to protect, praise and placate the dead, and to encourage their transition to the next life. The bereaved were also understood to be in transition, childlike in their need for comfort and support, and often rendered inarticulate by their grief, for which they needed help to express through formulaic language and from hired mourners.

Conclusion

Accessing the details of how mourning sounded is complicated by the nature of the evidence. Nevertheless, it is clear that the sounds of Roman mourning were striking and captivating. A funeral procession would have been heard before it was seen, and the mourners' sounds made them instantly recognizable. The sounds provided clear auditory cues, drawing attention to both the corpse and its entourage, in the home or on the streets. Mourning could toy with the sound norms, inverting expected vocal expectations. Yet for all this ear-catching discordant noise, the high mortality rate suggests that mourning sounds would have been familiar, even mundane. To make funerals stand out, the wealthy and elite could enhance the sonic elements – hiring more mourners, more lament singers, more musicians – as well as stimulating the other senses, but this embellishment of the performance could turn a funeral into a show, with familial mourners becoming spectators as their grief was enacted by others, and their own voices were silenced.

Mourning sounds performed ritual, emotional, practical and display functions. Some of the sounds were natural, some orchestrated and some scripted, but none were neutral, since they were all loaded with cultural and social expectations. In didactic literature, mourning sounds were one method of judging people, often negatively. In mourning, men were supposed to be quiet and women noisy, but it was not gender alone that dictated how a mourner sounded, since relative social status (e.g. whether the mourner was hired, a slave, an ex-slave, a client, etc.) came into play, as did chronological period. For the wealthy elite, the use of hired mourners reduced the volume of female familial mourning, placing formal laments, loud wailing and music in the hands of professionals. Men's public roles, including the giving of speeches, were re-scripted under the emperors, which may have led to a greater convergence between male and female mourning roles.[115] For neither men nor women was it acceptable to shriek or cry loudly, but modest groans, wails and lamentations were shared. Traditional gender expectations persisted, but the burden of giving voice to familial loss may have been more equally shared.

1 I would like to thank Eleanor Betts and the volume's editors for commenting on an earlier version of this chapter.

2 *Lamentis gemituque et femineo ululate / tecta fremunt; resonat magnis plangoribus aether.* The translation is from West (1991). Other translations are taken from the Loeb Classical Library.

3 Virgil, *Aeneid* 4.672–92.

4 E.g. Virgil, *Aeneid* 11.37–38; Ovid, *Tristia* 1.3.21; Seneca, *Trojan Women* 108–113; Lucan, *Civil War* 9.170; Statius, *Thebaid* 3.120; 6.28–30; Silius Italicus, *Punica* 12.595–99.

5 E.g. Cicero, *Tusculan Disputations* 2.31; Seneca, *Trojan Women* 1160–1; Seneca, *Consolation*

to Marcia 13.1; Seneca, *Epistles* 99.16.

6 Hope (2017).

7 Descriptions of funerals, while acknowledging sound and acoustics, focus most on visual aspects: e.g. Bodel (1999); Hope (2009: 65–96): Favro and Johanson (2010); Johanson (2011); Turner (2016), which underplays the largely oral and aural aspects of ancient society, and the close relationship between sight and hearing. See Toner (2014: 4) and Potter (2014: 29).

8 Alexiou (1974); Holst-Warhaft (1992); Loraux (1998); Stears (1998); Foley (2001); Richlin (2001); Mustakallio (2003, 2005); Corbeill (2004); Suter (2008); Šterbenc-Erker (2009).

9 Compare recent work on funeral and mourning rituals represented in Greek literature, including Hame (2008), Suter (2008c) and Suter (2009).

10 E.g. Appian, *Civil Wars* 2.143–147 (Julius Caesar); Dio Cassius, *Roman History* 56.34–42 (Augustus).

11 Social reality: e.g. Lucian, *On Mourning* 1.

12 The authors are of diverse origins, but the primary focus here is on the city of Rome. Note also that the vocabulary of mourning, and of mourning sounds, was also employed to describe lost love, exile and political disappointment, and some of these references are included, where relevant.

13 E.g. Seneca the Elder, *Controversiae* 3.8 (*imperari dolori silentium non potest*). Compare Cicero, *For Sestius* 39.84; Statius, *Silvae* 5.5.56–61; Tacitus, *Annals* 3.82; 3.1.

14 Statius, *Thebaid* 5. 593–4; see also Livy, *History* 8.7.21 and Lucan, *Civil War* 2.20–24.

15 Seneca, *Consolation to Marcia* 13.1–2.

16 Habinek (2005: 1).

17 Polybius, *Histories* 6.53.4–10; Flower (1996). For Caesar "speaking" in laments at his funeral see Appian, *Civil Wars* 2.146. Laughter, although not explored here, may have been a feature of some funeral processions: see Sumi (2002).

18 Suetonius, *Vespasian* 19.2.

19 Polybius, *Histories* 6.53–54; Flower (1996); Bodel (1999: 264).

20 Kierdorf (1980).

21 E.g. Quintilian, *The Orator's Education* 3.7.10–18; Seneca, *Suasoriae* 21. For a summary of one speech see, Pliny the Elder, *Natural History* 7.139.

22 Cicero, *On the Orator* 2.84; Quintilian, *The Orator's Education* 2.3.153. Note also how male orators should not sound soft, effeminate or non-Roman (Fögen 2009: 15–28).

23 E.g. Cicero, *On Old Age* 12.

24 Cicero, *Brutus* 61–62; *On Old Age* 12; Aulus Gellius, *Attic Nights* 13.20.17.

25 Appian, *Civil Wars* 2.142–47; Cicero, *Philippics* 2.91.

26 Quintilian, *The Orator's Education* 3.7.2; Pliny the Younger, *Letters* 2.1.6.

27 Price (1987).

28 E.g. Livy, History 5.50.7; Suetonius, *Julius Caesar* 6.1; Tacitus, *Annals* 3.76.

29 Alexiou (1974: 55).

30 There are no surviving examples of ritual lament, only "represented lament" (Suter 2008b: 15).

31 Examples are numerous. See, e.g. Virgil, *Aeneid* 4.481–97 (for epic female lament); Pseudo-Ovid, *Consolation to Livia* 121–64 (for poetic lament from a historical character); Lucian, *On Mourning* 13 (for a satirical male lament). For discussion, see, e.g. Fantham (1999); Keith (2008).

32 For content and form see Alexiou (1974: 161–84); Suter (2003: 3). Note lament is also associated with changing metres (e.g. anapests to iambo-dochmiacs in Greek tragedy) and poetic forms (e.g. elegy), and thus was signposted not just by content and context, but also by rhythm; see Suter (2003: 3).

33 Plautus, *Truculentus* 495–6; Varro, *On the Latin Language* 7.70; Servius on Virgil, *Aeneid* 6.216; 9.484; Richlin (2001: 243–4); Dutsch (2008: 534–6); Sterbenc Erker (2009: 142–3).

34 Richlin (2001: 235); Mustakallio (2003: 95); Mustakallio (2005); Habinek (2005: 237–8); Bodel (2000); Bodel (2004).

35 Šterbenc-Erker (2011: 48). There were striking exceptions, e.g. Fulvia (Clodius' wife) and Agrippina (Asconius on Cicero, *For Milo* 28.21; Tacitus, *Annals* 2.75.1).

36 Seneca, *Apocolocyntosis* 12.3–13.1. For discussion see Dutsch (2008: 543–54).

37 E.g. Horace, *Odes* 2.20.21–2; Habinek (2005: 237–8); Dutsch (2008: 553–4).

38 Servius, *On Virgil's "Aeneid"* 6.216 calls the *praefica* a leader of mourning (*princeps planctuum*). For participation and imitation in *nenia* see Habinek (2005: 236–7).

39 Cicero, *Tusculan Disputations* 4.18.

40 Livy, *History* 22.55.3. For women as main lamenters see, e.g. Terence, *Phormio* 96; Statius, *Thebaid* 12.793–809; *Silvae* 2.6.5; Silius Italicus, *Punica* 2.641; Tacitus, *Annals* 16.13; Apuleius, *Metamorphoses* 4.24–25. For the characterization of lament as feminine or womanish, see Cicero, *Tusculan Disputations* 5.112; Seneca, *Consolation to Helvia* 1.2; Tacitus, *Agricola* 29.1.

41 Livy, *Summaries* 79; Statius, *Silvae* 5.3.264.

42 Cicero, *Tusculan Disputations* 2.27; 2.31. Compare Tacitus, *Annals* 15.68.

43 E.g. Cicero, *Tusculan Disputations* 3.66; Livy, History 8.7.21; Livy, History 5.39.4; Statius, *Thebaid* 12.45; Tacitus, *Histories* 4.1; Petronius, *Satyricon* 72; Apuleius, *Metamorphoses* 8.13.

44 E.g. *singultus* (sobbing), Statius, *Thebaid* 2.633; Apuleius, *Metamorphoses* 2.27; and *suspiritus* (sighing), Ovid, *Metarmorphoses* 7.480; Seneca the Elder, *Controversiae* 2.2.3; Tacitus, *Agricola* 45.

45 E.g. Virgil, *Aeneid* 11.633; 11.865; Livy, History 10.35.6; 22.5.4; Ovid, *Metamorphoses* 2.605; Seneca, *On Anger* 1.1.4; Statius, *Thebaid* 9.288; 10.728; Tacitus, *Annals* 2.31; Suetonius, *Julius Caesar* 82.2; Plutarch, *Pompey* 79; *Otho* 17.3.

46 E.g. Virgil, *Aeneid* 7.15; Ovid, *Metamorphoses* 3.93; 3.236; Lucan, *Civil War* 6.688; Seneca, *Hercules on Oeta* 785–802; Statius, *Thebaid* 4.429.

47 Seneca, *Epistles* 96.2: *omnia autem, ad quae gemimus, quae expavescimus, tributa vitae sunt; horum, mi Lucili, nec speraveris immunitatem nec petieris.*

48 Cicero, *Tusculan Disputations* 2.55; 2.57. See also Seneca, *On Mercy* 2.6.4. For speeches, e.g. Cicero *Against Piso* 9.21; *For Plancius* 42.101.

49 Propertius, *Elegies* 4.11.58.

50 Statius, *Silvae* 3.3.31; Tacitus *Annals* 4.8; 3.1.

51 Petronius, *Poems* 19 (*Poetae Latini Minores* 92): *funera conciliant miseros, orbique parentes / coniungunt gemitus et facit hora pares.* Compare Statius, *Thebaid* 3.200.

52 Keith (2008: 506–7); Šterbenc-Erker (2011: 45).

53 At death announcement: Ovid, *Metamorphoses* 8.512–528; Virgil, *Aeneid* 4.667; 5.869; 10.843; Statius, *Silvae* 5.3.262; Silius Italicus, *Punica* 5.304. At laying out: Virgil, *Aeneid* 6.220; 11.36; Statius, *Thebaid* 12.47. At funeral: Seneca, *On Anger* 2.6.4; Statius, *Silvae* 2.1.178; 3.3.40. After funeral: Seneca, *Consolation to Marcia* 2.4; Petronius, *Satyricon* 111.

54 Loud groaning: Virgil, *Aeneid* 11.36; Ovid, *Tristia* 4.9.24; Statius, *Thebaid* 5.327; Silius Italicus, *Punica* 12.418. Quiet groaning: Seneca, *Consolation to Marcia.* 1.2; 13.1; *Consolation to Helvia* 17.1; Lucan, *Civil War* 7.43; Petronius, *Satyricon* 113.

55 E.g. Lucan, *Civil War* 1.190; 5.739; Seneca, *Thyestes* 951; Statius, *Thebaid* 5.607; Silius Italicus, *Punica* 9.156.

56 E.g. Virgil *Aeneid* 10.465; 11.150; Ovid, *Metamorphoses* 6. 565–6; Livy, *History* 28.32.4; Petronius, *Satyricon* 91; Seneca, *Hercules on Oeta* 1275; *Consolation to Helvia* 2.3; *Consolation to Marcia* 2.4; Lucan, *Civil War* 9.146; Statius, *Thebaid* 7.654;11.385; 11.608; *Silvae* 5.3, 45; Valerius Maximus, *Memorable Doings and Sayings* 4.7.4; Silius Italicus, *Punica* 5.303–04; 6.102;14.167.

57 Thus *gemere* can be translated as "to mourn" rather than "to groan".

58 Livy, *History* 22.55.3.

59 Apuelius, *Metamorphoses* 8.7.

60 Statius, *Silvae* 5.5.20. Compare Horace, *Odes* 2.20.24.

61 Servius, *On Virgil's* Aeneid 6.218. Anna calls to dying Dido (*Aeneid* 4.674), and Virgil also records calling the name of the dead person (three times) to placate the spirit (6.506).

62 Livy, *History* 1.58.

63 Ammianus Marcellinus, *History* 2.30.10; 21.15.4. Compare Ovid, *Tristia* 3.3.43. At the deathbed: Ausonius, *Epistles* 21.15; Fronto, *To Marcus as Caesar* 5.40 (55) = Fronto, *Correspondence* Loeb Vol. 1 p. 242. Compare Quintilian, *Minor Declamations* 246.4.

64 Lucan, *Civil War* 2.24.

65 Apuleius, *Metamorphoses* 2.27. Seneca also associates it with the home and neighbourhood of the dead person (*On Tranquility of Mind* 11.7).

66 Virgil, *Aeneid* 4.674 (sister); Livy, *History* 1.58 (husband and father); Seneca the Elder, *Controversiae* 4.1 (father); Lucan, *Civil War* 2.24 (mother); Statius, *Silvae* 2.6.5 (husband); Apuleius, *Metamorphoses* 1.6 (household); 2.27 (household); Ausonius, *Epistles* 21, 15 (household); Fronto, *To Marcus as Caesar* 5.40 (55) = Fronto, *Correspondence*, Loeb Vol. 1, p. 242 (household).

67 Tacitus, *Annals* 3.2.

68 Tacitus, *Annals* 1.41: *febilis sonus.*

69 Note that the terms for mourning, *luctus* and *lugere*, also had the implicit sense of wailing; see Corbeill (2004: 68).

70 Seneca, *Epistles* 63.1: *lacrimandum est, non plorandum.*

71 Cicero, *Tusculan Disputations* 2.38.

72 E.g. Seneca, *Epistles* 77.11; *Apocolocyntosis* 12; Petronius, *Satyricon* 72; Martial, *Epigrams* 6.63.8. Crying was not construed as un-masculine; Seneca noted that tears fall naturally and ease the soul (*Epistles* 99.16; cf. Seneca the Elder, *Controversiae* 6) but such weeping ideally needed to be limited, private and not excessive (Seneca, *Epistles* 63.2).

73 E.g. Plautus, *Curculio* 520; Livy, *History* 5.42.4; 26.9.7; 26.13.13; Quintilian, *The Orator's Education* 8.3.60; Juvenal, *Satires* 6.272; Martial, *Epigrams* 4.58; 8.61.1.

74 E.g. Cicero, *Letters to Atticus* 5.16.2; *Against Piso* 89; Livy, *History* 26.10; Tacitus, *Agricola* 38.1; Tacitus, *Annals* 3.4.

75 Wolves and dogs: Virgil, *Aeneid* 6.257; 7.18; Ovid, *Metamorphoses* 13.571; Petronius, *Satyricon* 62; Silius Italicus, *Punica* 7.129. Witches and ghosts: Horace, *Satires* 1.8.25; Tibullus, *Elegies* 1.5.55; Ovid, *Metamorphoses* 4.404; Lucan, *Civil War* 6.690; Tacitus, *Annals* 14.32.

76 Ecstatic worship: Catullus, *Poems* 63.24; 63.29; Ovid, *Metamorphoses* 3.528; Lucan, *Civil War* 1.567; Juvenal, *Satires* 6.316. Barbarian war cries: Livy, *History* 5.39.5; 38.17.4; Caesar, *Gallic War* 5.37.3; 7.80.4; Tacitus, *Histories* 4.18; Ammianus Marcellinus, *History* 19.11.10; 31.12.11.

77 E.g. Ovid, *Metamorphoses* 3.179; Lucan, *Civil War* 2.33; Statius, *Thebaid* 3.158; 9.724. Tacitus, *Annals* 4.62; Pliny the Younger, *Letters* 6.20.14.

78 E.g. Livy, *History* 43.10.5; Virgil, *Aeneid* 2.488; Ovid, *Metamorphoses* 9.644; *Heroides* 5.71; Statius, *Thebaid* 10.567; see also Tacitus, *Annals* 16.10; Apuleius, *Metamorphoses* 7.27; 8.7; 8.9.

79 Virgil, *Aeneid* 9.477; 4.667.

80 E.g. Statius, *Thebaid* 5,554; 11.178. For discussion Richlin (2001: 238); Sharrock (2011: 57–60).

81 Quintus Curtius Rufus, *Alexander* 3.12; see also 4.15; 4.16.

82 Virgil, *Aeneid* 11.190; Silius Italicus, *Punica* 6.563.

83 Silius Italicus, *Punica* 13.313: *femineum ululatum*. Compare Horace, *Epodes* 10.17.

84 Cicero, *On Laws* 2.23.59; *Tusculan Disputations* 2.55.

85 See, e.g. Appian, *Civil Wars* 2.146; Tacitus, *Annals* 3.5; Lucan, *Civil War* 9.734; Suetonius, *Augustus* 100.2. The latter involved children of noble birth, and the "funeral" of Pertinax had men and boys singing (Dio Cassius, *Roman History* 75.4.5).

86 For fluidity in defining ritualized and performed words as either song or speech, see Habinek (2005: 58–109).

87 Propertius, *Elegies* 2.7,12 (*funesta tuba*); Ovid, *Heroides* 12.140 (*funerea tuba*); Persius, *Satires* 3.103 (*hinc tuba*). See also Propertius, *Elegies* 2.13.20: *nec tuba sit fati vana querela mei* ("no trumpet be the vain lament of my death").

88 Bodel (1999: 267); Leach (2006b); Hope (2007: 98).

89 Ovid, *Fasti* 6.668. See also Statius, *Thebaid* 6.120–5.

90 Bodel (1999: 264–65); Hughes (2005); Hope (2007: 100); Potter (2014: 39).

91 Seneca, *Apocolocyntosis* 12.

92 Suetonius, *Julius Caesar* 84.4; Petronius, *Satyricon* 78.

93 Aulus Gellius, *Attic Nights* 20.2.

94 Propertius, *Elegies* 2.7.12; 2.13.20; 4.7.4; Ovid, *Heroides* 12.140; Persius, *Satires* 3.103; Horace, *Satires* 1.6.42; Seneca, *Apocolocyntosis* 12. For adjectives describing the sound of the Roman *tuba*, see Vincent (2017). Other instruments, including percussion instruments, may have been used, but are not explicitly mentioned in the sources.

95 Cicero, *On Laws* 2.23.59; see also Ovid, *Metamorphoses* 6.663–4.

96 Horace, *Satires* 1.6.42; Petronius, *Satyricon* 78.

97 For the following description see references as above, with Bodel (1999); Hope (2007: 85–127); Hope (2009: 65–96); Favro and Johanson (2010); Potter (2014). To hear a recreation of Roman funeral music, although on what evidence it is based and what specific context it evokes is uncertain, see the online version of Favro and Johanson (2010).

98 The *collocatio* could last for several days, although those of poorer means would have had no space for such an event. For nocturnal attendance of the corpse, see Apuleius *Metamorphoses* 2.29–31.

99 Favro and Johanson (2010: 22); Betts (2011); Veitch (2017).

100 The order may also have differed with all mourners going before the bier: see Dio Cassius, *Roman History* 75.4.3.

101 For the term soundscape, see Schafer (1977), but note a lack of consistency in its subsequent use (Kelman 2010).

102 Compare Bull and Back (2003: 5–6); Caswell (2012).

103 The loudest known sound was a thunderclap, probably followed by a human shout (Betts 2011), although cumulative crowd noise may also have been loud, on which see Veitch (2017:67–68). For the association of noise with disorder, warfare and politics in Latin literature, see Laurence (2017: 16–17).

104 E.g. Petronius, *Satyricon* 42; Horace, *Art of Poetry* 431; Seneca, *Epistles* 99.17.

105 Women could legally mourn for male relatives for up to ten months (Plutarch, *Numa* 12.3; Seneca, *Epistles* 63.13). For mourning of public figures, see, e.g. Plutarch, *Publicola* 34.4; Dio Cassius, *Roman History* 56.43 (Augustus). Note also Loraux (1998: 31).

106 E.g. Cicero *On Laws* 2.23.59; *Tusculan Disputations* 3.62; Seneca, *Consolation to Helvia* 3.2; Šterbenc-Erker (2009: 148–9).

107 Cicero, *On Laws* 2.23.59

108 Prescendi (2008). For comfort in mourning together see, e.g. Seneca, *Trojan Women* 1010; Pliny the Younger, *Letters* 8.16.5; Plutarch, *Consolation to his Wife* 609A–B.

109 Loraux (2002: 54–65). For the embodied experience and creation of memory, see Graham (2011). For laments and music inciting tears but also soothing distress see Plutarch, *Table Talk* 657A. Compare Plutarch, *Consolation to his Wife* 609A–B. Note that modern funeral music can have socializing, memorializing and structuring functions: see Adamson and Holloway (2012); Caswell (2012).

110 Lindsay (2000); Lennon (2013: 136–66).

111 For vulnerability of the corpse, see Apuleius *Metamorphoses* 2.30.

112 For the oppositions between corpse and mourners, including silence and noise, see Ochs (1993: 48); Hope (2017). For the absence of the senses in death, see Walters 2013.

113 Corbeill (2004: 89–106); Dutsch (2008); Hope (2010).

114 Lucretius, On the Nature of Things 2.575–80.

115 Note there may have been a shift from the *pompa*, Forum and the *laudatio* to the *collocatio* and the pyre or grave, on which see Bodel (1999), and a new focus on home and family may have made the male expression of loss and grief more acceptable. See Dixon (1991); Markus (2004: 126); Gibson (2006); Hope (2011: 111–15).

Part II
Theories of sound

5
Sound

An Aristotelian perspective

Stephen Kidd

Some think that sound affects the emotions more than touch, smell, taste and even sight.[1] Whether we agree with this or not, the notion that sound *affects* the emotions would seem to be fairly uncontroversial. Sound can affect the emotions like a cannonball can affect a wall: it comes from the outside and hits the hearer, whose emotions are "moved" by the sound. It cannot, however, be said that sound *is* the emotions: sound is somehow external, the emotions internal. Similarly in both English and Greek, one "perceives sound" or has a "perception of sound": sound is a grammatical object that one perceives, just like the cannonball perceived coming towards us.

But is sound really like this? This idea of sound, which many ancient thinkers do not in fact share,[2] rests on an exclusively objective definition, for example "an impact of air that has been prevented from dispersing",[3] as one ancient acoustician put it, or "an intermolecular collision process",[4] according to a modern one. The arbitrary nature of such objective definitions for explaining "sound" in its everyday sense[5] creates problems – for example, why are only vibrations between 20 and 20,000 Hz considered "sound"? – and such problems can only be resolved in the direction of subjectivity. It is "sound" because the ear hears it as such, "sound" because it is a vibration within "hearing range", "sound" because it is the ear which converts what would otherwise be just physical vibration to "sound". In this expansion of sound's definition, one moves away from acoustics proper, which studies the physics of

sound, to psychoacoustics, as it is generally called today. But when one does so, a new problem arises regarding just where one ought to draw the line at "sound".

To state the problem exactly: how much can the experience of "sound" be stripped bare to becoming "just" sound? That is, what would sound be if one could strip away the emotions, the judgements, the pleasures and pains, the memories, the words that describe sounds, and the very awareness of the fact that one is hearing, and actually experience "sound" alone? Is this something possible, in fact, to hear? This is the question of the present chapter, and its main interlocutor will be Aristotle, although along the way other ancient philosophers and acousticians will be drawn into the conversation. Although I will not claim that sound is reducible to the emotions, I will argue that Aristotle would probably admit that there is a redundancy in sentences like "sound affects the emotions"; and, further, that his answer to the question of this chapter is fairly clear: no one – not even the simplest of animals – has ever experienced "just sound".

Sound in Aristotle: a cursory overview

It might be useful to begin this cursory overview by imagining a few sounds: 1) a handful of seeds falling on the ground, 2) a baby's cry, 3) a guitar strum. What the reader has just "heard" is important for Aristotle, as will be discussed in the next section, but for the moment, the actual sounds are at issue. Aristotle would explain these various sounds (*psophoi*) as being caused by the striking (*plēgē*) of some suitably hard and smooth object against some other suitably hard and smooth object: in the case of the guitar strum, for example, it would be the striking of the plectrum against the guitar strings. Soft and uneven objects, like wool or sponge, on the other hand, make no sound (*On the Soul*, 2.8.419b6, 15), because what is needed is a surface that can change the surrounding air "all in one mass".[6] Perhaps Aristotle is imagining something as follows: when one pushes water with the flat of the hand, there is a strong effect, but when the same motion is made with open fingers, the effect is diminished. Something similar must happen when wool or sponge remains soundless after being struck. Smooth objects, on the other hand, do sound, because, like the flat of the hand, they affect the air all in one mass and do not allow it to "disperse", as Aristotle would say.[7]

This striking of the strings causes a certain change in the surrounding air, and this air "changes" all the way up to the organ of hearing: as Aristotle puts it, "the thing changed is sound-able (*psophētikon*) by means of the unified air up to the point of hearing".[8] But this change of the air around the sounding

object ought not be confused with the modern concept of a soundwave, where the soundwave travels through time and space until it reaches the ear.[9] Instead, the air is "one" and "in one mass", and so changes as "one" and "in one mass".[10] Like light entering a room – which Aristotle insists is an instantaneous change, in strong opposition to Empedocles who maintained light's motion[11] – sound is similarly instantaneous and requires no time. As soon as the strings are struck, the air is "changed", and as soon as the air is changed, the hearing mechanism registers that change, and so itself is changed.[12] The sound in this moment, from sounding object to hearing subject, to put it in Aristotle's language, is "actualized".[13]

This instantaneous account of sound raises some problems, if one considers, for example, echoes. How can Aristotle explain echo if sound itself does not move? To explain an echo in physical terms, one presumably requires some recourse to sound moving through time in order to explain the time-lag that one experiences when hearing an echo. Aristotle's solution is elegant: pockets of air which contain the sound separate off, and these air-pockets move through time and space, bouncing off surfaces "like a ball", only to later reach the listener. The sound itself, however, does not move, but instead permeates that air within the air pocket, which does move. This, he adds, is also how light is reflected everywhere: light itself does not move but permeates the air which does (*On the Soul* 419b28–33).[14] (For more on echoes, see LeVen, this volume.)

This physics of sound, really the science of acoustics, provides the means to answer some of sound's questions, but it does not get us very far in explaining the question at issue in this chapter, which revolves around the experience of sound: that is, what does the sound of a guitar strum sound *like* and how can we disentangle this experience of sound from, for example, the experience of pleasure or memory? It seems that the external physics of sound does not explain enough for Aristotle either: as was seen, he includes the "hearing" as an irreducible element in sound's definition (*On the Soul* 2.8.420a3–4: "something changed is sound-able by means of the unified air up to the point of hearing"). Just as the ear would register no sound if the strings were not struck, the strings would make no sound if an ear did not hear it: what "sounds" and what "hears" are on the continuous chain of instantaneous actualization that is "sound".

Aristotle's explanation of sound thus stands in opposition to those from philosophers who would offer a more objective explanation, insisting, for example, that sounds exist independently of any act of hearing. (Epicurean thought, as expressed by Lucretius, similarly offers an interactive, non-objective theory of sound: see Zinn, this volume.) Such philosophers would probably confront Aristotle with the sound that was imagined earlier, namely, the handful of seeds falling on the ground. The example, listed as one of Zeno's

paradoxes, seems to quickly expose the weakness of an irreducibly subjective definition like Aristotle's.[15] The objection goes like this: how can it be the case that one seed falling creates no sound since we cannot hear it, but a handful of seeds does create a sound, since we can hear it? Surely the seed creates sound whether we can hear it or not, otherwise the handful of seeds too would be inaudible. Aristotle would probably defend his position by saying that the seed does create a change of sorts in the surrounding air, but if it is not registered by some listener there is no sense in calling that change "sound".[16]

The hearing of a sound, then, is central to its explanation for Aristotle. But what, then, is this "hearing"? As is shown well by Stephen Everson, even once reaching the hearing mechanism inside our body, the physics of sound has not been abandoned for a new world of mental terminology that might help to describe how sounds are heard.[17] Instead, the physical changes that occur in the outside air are essentially reproduced by the special air inside the hearing mechanism.[18] In fact, that internal air seems just to *be* the hearing mechanism, and the changes that internal air reproduces seem just to *be* hearing. Aristotle explains it like this: "air is connate with [*sumphuēs*, literally 'born together with'][19] the organ of hearing and because the hearing mechanism is in air, when the air outside [the ear] is changed, the air inside the ear is changed".[20] Just what Aristotle means by this depends not only on what one thinks "in air" means, but whether "in air" is the text that one reads at all.[21] Let it suffice to say that the change of the outside air changes the inside air, whether it is because the two are continuous or because there is some kind of sympathetic resonance between the two.

One must be careful, however, regarding just what this airy hearing mechanism is reproducing when one hears. It is not actually a "guitar strum" or a "baby's cry" or a "handful of seeds falling on the ground" that is heard at all. Rather it is a certain *logos* or proportion, he says. Aristotle's famous analogy, which covers the operations of all the senses, is that of a wax seal: "perception is that which is receptive of perceivable forms without the matter, like wax receives the signet of a signet ring without the iron and gold: it takes the gold or bronze signet, but not as gold or bronze".[22] This powerful idea of a form that can only be realized in matter but nevertheless cannot be equated with that matter is central to the *psuchē* of *On the Soul*, but how does this analogy apply to hearing? As he continues in the next sentence, although the sounding thing is what causes one to hear, it is not the thing itself which is heard, but rather its quality and form.[23]

This is saying something more than that a strummed guitar or crying baby is not being stuffed into the ear. The point is rather that sound at this moment of hearing is not in fact a "guitar strum" or "baby's cry" at all. Rather it is a mere *logos* (proportion) of certain binary sound qualities like high and low

pitches.[24] The "guitar's strum" or "baby's cry" have different proportions, for example, of high and low, and all that is being transferred from that outside air is that proportion, nothing more. It would seem that other psychic faculties are required beyond the hearing mechanism to register sounds like "guitar strum" or "crying baby", for example, the application of words like "guitar strum" and "crying baby", or even more essentially the capacity of memory to connect that particular proportion of high and low pitches to objects like strummed guitars or crying babies.

Only the *logos* of these sounds, then, is being transferred, nothing more. If this is so, it would seem that this *logos* is rather close to answering the question of "just sound" posed at the beginning of this chapter. There I asked whether sound might be stripped bare of its cognitive and affective accompaniments – for example, pleasures and pains, words and memories, the very awareness that one is hearing[25] and so forth – and be experienced as "just sound". The proportion or *logos* that the hearing mechanism reproduces from the outside air seems, in fact, precisely to be "just sound". One might then conclude that the question of this chapter resolves itself rather easily: "just sound" is exactly what we hear. Aristotle takes his readers on a route from the sounding object to the sound medium to the hearing mechanism and demonstrates that what is transferred in "sound" is that certain *logos* or proportion of high and low pitches. This *logos* constitutes sound.

On the other hand, if "just sound" is to be equated with this *logos*, one feels no closer to an answer, because it is not particularly clear in what sense this *logos* is sound at all. That is, if the proportion of high and low pitches in the external air "changed all in one mass" did not qualify as sound for Aristotle because it was not "heard", why would a proportion of high and low pitches inside the ear qualify as sound? Has a distinction in fact been made between "air changed all in one mass" and "sound" as it is experienced? Or have we not really yet "heard" anything at all?

What sound sounds like

To put it bluntly, one cannot help but feel that Aristotle is just kicking the can down the road. If a change in the air outside the ear is not enough to affect hearing, why would a change of air inside the ear be enough to do so? Could one not extend this series of "changing airs" indefinitely without latching onto any one point that might be identified as "hearing"? This is not only a modern concern: Aristotle's close colleague Theophrastus, in his surviving discussion of the senses, similarly criticizes previous accounts of perception. He complains for example regarding Empedocles (who seems to have described

hearing as particles entering the ear orifice) that "from his account one would be at a loss first regarding how animate beings will be different from everything else when it comes to perception. For particles fit into the passages of inanimate things as well" (*De sensu* 12).[26] Whereas regarding Anaxagoras (36), Theophrastus objects that if "seeing" is just light being reflected, lifeless things with reflective properties would have sight too: a pool reflecting the colour red would be no different from the eye reflecting the colour red – or, to put it in terms of sound, a rattle containing sound would be no different from an ear containing sound.

Has Aristotle himself escaped Theophrastus' objection?[27] Is it possible to distinguish the inanimate from the animate in his account or is the changed external air identical to the changed internal air, and, to quote Theophrastus (*De sensu* 21), "the old problem still confronts us"?[28] The rather quick answer – that Aristotle's very definition of sound escapes the problem by making hearing an irreducible element of sound – would not, I think, satisfy Theophrastus' objection. If "hearing" is just internal air being changed by external air or sound particles entering into the sound orifice, no real animate/inanimate distinction has been made by including "hearing" as an irreducible element to sound. What Theophrastus seems to want is some fundamental distinction between processes like sound-particles-entering-ear-cavity (or external-air-changing-internal-air) and "hearing".

One potential solution is that there is an important difference between the outside and inside air for Aristotle, but this partly depends on one's reading of the manuscripts as well: Aristotle explains that we hear only with the ears and not at every part of the body because "not at every place in the body is there air which will be changed and is *ensouled* (*empsukhon*)".[29] If this is what Aristotle wrote, it would at least put a certain end to a possibly endless series of changing airs, none of which are more likely than the next to account for hearing. And there is good reason to do so: even if Aristotle did not write that this air is "ensouled", he uses a term repeatedly for this internal air which almost says as much: as has been seen, he calls it "connate" air. Elsewhere he writes that the organ of hearing is "full of connate *pneuma*" (another "air" word), and that these passages (*poroi*) end at the blood vessels (*phlebes*) around the brain which extend all the way from the heart[30] (the heart, not the brain, being the controlling organ for Aristotle[31]). There is a crucial difference then between the changed external air and the changed internal air: the internal air is connate and part of an ensouled organism, which is to say the internal air is itself "ensouled".[32] Such internal air thus reproduces the external air's changes as part of that ensouled perceptory system.[33]

This is a crucial distinction but it still seems to keep us at the same dead end regarding our (and perhaps even Theophrastus') question. Even if the external

air is differentiated from the internal air by virtue of being animate and part of an animate body, the distinction still does not seem to differentiate between that *logos* of high and low pitches and "sound", that is, sound as one experiences it. That *logos*, after all, might be represented mathematically or graphically, but encountering such a *logos* in mathematical terms is presumably something different from actually hearing a guitar strum or baby's cry. One would wish for a discussion in Aristotle regarding the way sound *seems* to us (i.e. what does sound sound *like*?), engaging the question not from the outside in, as it were, but from the inside out: not "what is this thing that is being perceived (a change of air all in a mass)?", but "how does this change appear to us (i.e. 'sound')?"

Greek might express this distinction with a word like *phainetai* ("x seems …"), so often followed by that enclitic *moi* ("to me") which hides the fact that that *moi* is rather a point of emphasis. A verb phrase like *phainetai moi* ("it appears/seems to me") inverts the subject-object relationship of *aisthanomai* "I perceive x", and in so doing, emphasizes the one who is perceiving it. (We both perceive x, but does x appear the same way to you?) The distinction is important for Aristotle, and he treats it in his discussion of the psychic faculty that he calls *phantasia*, a faculty very much based on this verb *phainetai* ("it seems"). *Phantasia*, it seems, is the faculty by which something seems to us (*phainetai*).[34] It should be noted straightaway that the interpretation of this concept is highly contentious, but nevertheless most scholars today would agree that it is impossible to give an account of Aristotle's sound (at least as far as I have posed the question of sound) without discussing this concept. How does sound "seem" or "sound like" to the one perceiving it? Aristotle notes that *phantasia* in its everyday sense tends to connote vision (*On the Soul* 3.3.429a2–4), but his appropriation of the term applies to all five senses (cf. *On Dreams* 3.461a23–30). *Phantasia* as he broadly defines it is "a change arising because of an act of perceiving"[35] : it is practically the same thing as perceiving but different to it in its "being", he says (cf. the difference between "I perceive x" and "x appears to me as …").[36] To ask "what does sound sound *like*" is to consider the workings of *phantasia*.

As a first step in considering what sound sounds *like*, it is worth taking into account the issue of perspective: what does sound sound like for the person standing at a certain distance from the sounding object, with two functioning ears placed on either side of the head a few feet above the ground?[37] Presumably something would sound differently (e.g. the guitar strum) if one had only one ear, or if one were the size of an insect, or if one were standing much farther or closer to the sounding object.[38] As Aristotle says in one of his more debated examples of *phantasia*, the sun *seems* to be rather small from our perspective, even though we judge it to be otherwise. We know the sun is

millions of miles from the Earth, a hundred times the Earth's diameter, and so forth, and, furthermore, we know this without appeal to a certain perspective at all. It is thus worth keeping appearances separate: in regard to sound, what we might know about the guitar strum (e.g. its *logos*) is not identical with how the guitar strum sounds.[39]

This issue of perspective, however – namely that we, as embodied creatures, must hear things from a certain vantage point, even though things exist regardless of that vantage point – is only a minor aspect of Aristotle's *phantasia*. It is not just the fact that we, as embodied creatures, hear things *as* far or close to us. We also, by means of *phantasia*, hear things *as* pleasurable or painful, *as* loud or soft, and a great deal of other "as"s. Further, these perceptions[40] change not only depending on what sort of animal we are, but also what sort of state we are in: for example, whether we are healthy or sick. The guitar strum, for example, may sound pleasurable when we are healthy, painful when suffering from a migraine or hangover. As Nussbaum puts it, Aristotle's "basic interest [regarding *phantasia*] is in how things in the world appear to living creatures, what they see their objects *as*".[41]

It may be worthwhile to consider an example here. In the *History of Animals* (627a15–17), Aristotle discusses bees and their alleged fondness for the sound of rattles: "Bees are supposed to enjoy the sound of the rattle, which is why people claim to collect them into the hive by rattling potsherds and pebbles".[42] What is it that these bees are hearing? It would be odd to assume that the bees, when they hear these rattles, are somehow seeing an "image" from their "imagination" (as *phantasma* and *phantasia* are too often translated): what, after all, would they be "seeing"? Yet the sound obviously has some effect on their actions since it causes a change in their movement in some observable way. Aristotle expresses uncertainty whether the bees change their movement "because of fear or pleasure" (πότερον δι᾽ ἡδονὴν τοῦτο ποιοῦσιν ἢ διὰ φόβον) although it is interesting that he has limited the psychic options to the simplest of pairings.[43] But even for these basic options of attraction (pleasurable) and repulsion (fearsome), these sounds would need to *sound* pleasurable or fearsome for these bees. And this sounding-as requires something more than that mere *logos* of perception that the hearing mechanism has provided.[44]

If this role is fulfilled by *phantasia* for Aristotle – as I take it to be – it raises a major obstacle for the possibility I have been pursuing in this chapter, namely, hearing "just" sound. There is no hearing *just* sound, such an account would seem to suggest, there is only hearing sound *as*. The *logos* (proportion) that the hearing mechanism replicates seems to be only accessible through that fog of other psychic elements (e.g. pleasure, pain, desire, etc.). One can reconstruct, as it were, what that *logos* originally was, but one cannot

experience that *logos* in and of itself. Here it will not do to imagine, for example, hearing a mere frequency (say, 1000 Hz) as opposed to more complex sounds like a guitar's strum or a baby's cry.[45] The frequency is still nevertheless heard *as* something (for example, pleasurable or painful), to say nothing of the associations such a sound would have with computers, alarms, digital depictions of frequencies, negative feelings about inorganic sounds and so forth. To what extent such memories and associations, let alone language, which opens the floodgates to socially constructed sounds, ought to be heaped onto the workings of *phantasia* is too much to consider here. It is enough to pose the possibility that, even at a minimal level, there is no separating an experience of sound from our experiencing it *as* something.

This possibility for sound becomes much stronger when considered in light of Aristotle's ideas of what sound is for. It is not quite right to say that "sound" interacts with other psychic events to create our auditory experience, whereas "sound itself" is something to be kept separate. Instead, Aristotle treats the relationship between sounds and these other psychic events as a necessary one. He discusses this, for example, at *On the Soul* 2.2 (413b21–4), where he observes that insects, when cut in half, still seem to exist in both halves:

> Each part has both perception and locomotion; and if it has perception, it also has *phantasia* and appetition; for where there is perception there is also both pleasure and pain, and where these, necessarily also desire.[46]

To take the example of the baby's cry, it is not merely difficult to clear the cobwebs of compassion or displeasure or annoyance from the sound itself: it is rather that these pains and desires and catalysts for movement ("Help the baby?", "Move to the next subway car?") are *necessarily* there (ἐξ ἀνάγκης). Emotions seem to be an inextricable, or as Aristotle writes, "necessary" element in the perception of sound.

But it is more than mere co-occurrence. It is not just that these other experiences cannot help but be conjured up by the perception of sound. It is rather that the very purpose of "sound" is to conjure up these feelings, emotions and catalysts for movement. In *Sense and Sensibilia*, Aristotle puts it this way (1.1.436b18–437a1):

> The senses which function through external media, i.e. smelling, hearing and seeing, exist for all animals with the capacity for locomotion. Those that have these senses have them for the sake of preservation: to pursue food by perceiving it ahead of time, and escape from that which is harmful or destructive.[47]

The reason for sound is one of biological necessity. Animals that have the power of locomotion require a means to use that locomotion for their own survival. The information gained from the senses allows an animal to hear the

predator and escape, to hear the lowing cow and pursue,[48] or to hear the cry of one's offspring and help. The purpose of sound, then, seems to lie in sounding *as*, since it is "sounding as" not "just sound" that catalyses motion.

The *logos*, by contrast – that mathematical proportion of high and low pitches that the hearing organ replicates – is not "sound" as any animal experiences it. It might be better to think of it instead as an unobserved catalyst for "sound", conjuring, as it does, a great jumble of feelings that can include pleasure, pain, longing and so forth, and that ultimately cause motion towards objects of desire and away from objects of repulsion. Although one might reconstruct what that sound was by experiencing it from some different psychic states (healthy, sick, happy, depressed, etc.) and distil some common denominator of "just sound" from it, this is an artificial partitioning from hindsight and does little to explain sound as it is actually experienced.

This is not, however, to conflate sound with the emotions or other psychic events. As a biologist like Aristotle would remind, there is a difference between harming the organ of hearing and harming the organ where emotions arise.[49] Sound, after all, is not required to experience feelings and emotions and, more importantly, such feelings and emotions seem to be something qualitatively different from the experience of sound. Most importantly of all, this qualitative difference seems to lie in that very *logos* of high and low pitches, since qualities like pitch are the very ones missing from other psychic experiences like emotion.[50]

Nevertheless, what Aristotle shows with *phantasia* is that what the hearing mechanism registers is inseparable from experiences like pleasure and pain: such experiences are, in a sense, why the organism is hearing in the first place. Since ensouled creatures move, it makes good sense to incorporate hearing into that over-arching function,[51] and, as such, it may even go some way to answering Theophrastus' animate/inanimate objection: sound occurs at that intersection between a moving animal and a certain change in the air. Although it is probably not quite right to say that there is no such thing as "just sound" for Aristotle, it does seem to be the case that no animal has ever heard it.

Conclusions

Theophrastus, so Plutarch reports, made an observation rather similar to the one offered at the beginning of this chapter: that sound affects the emotions more than the other objects of sense, for example, sight or scent. But the careful way that Theophrastus phrases the similar claim is enlightening: he does not write "sound affects the emotions most of all" but "hearing is the

most emotional of the senses".[52] The translation captures the distance I have been trying to cover in this chapter. Whereas Theophrastus' sentence is not redundant, my sentence ("sound *affects* the emotions"), as I have been arguing, is. Sound, as Aristotle defines it, includes the act of hearing as an irreducible component. It is not some external object with its own separate existence outside of hearing but fully integrated into hearing: it would not otherwise be "sound". Further this act of "hearing" is more than just a change or vibration replicated inside our eardrums: the process of hearing conjures some cognitive events ultimately leading to action or quasi-action.[53] All senses are emotional, Theophrastus seems to be saying, but hearing is the most emotional.

How can one experience "just sound"? It will not do, as I have suggested, to imagine the experience of non-human animals, like insects. Although the passages continue to be debated, it seems that Aristotle ultimately decides that all animals, including the ants and bees he initially hesitates over, have the capacity of *phantasia*.[54] That is to say that the world seems a certain way to them, and so sounds are always experienced *as* something, for example, *as* pleasurable or *as* painful.[55] There is no "just sound" even for the simplest organisms, at least for those that have the ability to hear. All of which leads one to wonder: if the *logos* of high and low pitches is to be equated with "just sound" – that is, sound stripped of the pleasures and pains of sounding as – then is *listening* to "just sound" the proper route to accessing it? Plato's Socrates seems to consider as much when he taunts the sound scientists who listen closely to their instruments "as if eavesdropping on their neighbours", and "torture" their strings in order to discover the mathematical proportions behind them.[56] Such scientists, he says, "place their ears before their mind",[57] a reminder that there are other routes to the *logos* of sound than through the auditory canal. It seems that Socrates is suggesting here that in order to experience "just sound", whatever that may be, one ought not *hear* it at all.[58]

1 Cf., e.g. Theophrastus fr. 293 FHSG (= Plutarch, *On Listening to Lectures* 2.37f–38a) for a similar statement regarding sound's pronounced effect on the emotions: this fragment will be discussed in the chapter's conclusion.

2 For ancient treatments of sound where hearing is an irreducible component, cf. Plato *Timaeus* 67b. The Pythagorean counter-argument will be presented below. Cf. Huffman (2005: 135–6, at 135): "Archytas, still reporting and evidently accepting the views of his predecessors, goes on to emphasize that sounds do not have to be heard in order to exist. This emphasis is in strong contrast to Plato's account of sound in the *Timaeus*". Cf. Aristoxenus' position (Barker 1978: 10): "Height and depth of pitch are perceived qualities of sound and need to be investigated as such. They are not rates of vibration, or of any other kind of physical movement, and they are not numerical ratios". For general overviews of ancient acoustics, see Hunt (1978: 9–42) and especially Barker (1989).

3 Adrastus the Peripatetic quoted at Theon of Smyrna, *On the Usefulness of Mathematics for Understanding Plato* 50, regarding the Pythagorean notions of sound (ψόφος δὲ πληξις

ἀέρος κεκωλυμένου θρύπτεσθαι).

4 Ingard (2008: 1): "On the microscopic level, sound is an intermolecular process, and, unlike an electromagnetic wave, a material medium is required to carry a sound wave".

5 I.e. "sound" being the object of hearing, as opposed to its more technical sense, e.g. "mechanical vibrations in matter regardless of whether they are audible or not" (Ingard, *ibid.*), which nonetheless applies vestigial distinctions like infrasound and ultrasound.

6 ὅταν κινηθῇ συνεχὴς καὶ εἷς (2.8.419b35; cf. 420a1–2).

7 For dispersal, cf. 2.8.419b21–2 (*diakhuthēi*), 23, 26, 420a8, (*thruptomai*, *thrupsis*, etc.).

8 420a3–4: ψοφητικὸν μὲν οὖν τὸ κινητικὸν ἑνὸς ἀέρος συνεχείᾳ μέχρις ἀκοῆς.

9 Cf. Johnstone (2013), who argues that the change is a vibration that produces a soundwave; but he, like Towey (1991) (see below), reads into Aristotle's discussion of the moving medium (i.e. air) a "movement" of sound. Instead the *kinesis* of sound is parallel to that of light (note Aristotle's usage of this verb regarding light at 2.7.419a13–15). Why else would Aristotle insist that it is not the *sound* of thunder which causes a rock to split but the air conveying it (2.12.424b11–12)?

10 Cf. the point made about light at 2.7.419a13–15. See Johansen (1998: 148–56) for a good reading of the passage with a focus on the light/sound analogies.

11 2.7.418b20–26 with the analogue of sound closely following at 2.7.418b26–7. Cf. the analogous treatment of light and sound regarding echoes (below), and at 423b12–13.

12 The nature of this instantaneous change may be a vibration (as *seisthai*, "vibrate", suggests, 2.8.420a26) but it should be seen as air vibrating "as one block" (Burnett 1991: 56) not setting off a wave motion, which is a later Peripatetic idea (cf. Aristotle [attributed], *Problems* 11.6, Aristotle [attributed], *On Things Heard*, and Alexander's *On the Soul* 48.15 on sound moving "in succession" [κατὰ διάδοσιν]). For the further tradition, see Burnett's excellent article. For how Greek might express change from non-vibration to vibration without an act of motion, Rijksbaron's "immediate imperfect" (2002: 17–18) is illuminating.

13 For actualized sound (i.e. sound in *energeia*) cf. 2.8.419b5, 9, and *passim*.

14 Cf. the discussion of sound's perceived time-lag in *Sense and Sensibilia* 6. Towey (1991) misunderstands Aristotle's position by prioritizing this passage over *On the Soul* 2.8. But in *Sense and Sensibilia* 4.440b27–8, Aristotle explains that he has already given his account of sound in the *On the Soul* and will not do so again; *Sense and Sensibilia* 6 is not then his account but a "problem", i.e. a question someone might raise about his account; it seems that the perceived time-lag of sound at a distance is due, like the echo of *On the Soul* 2.8.419b25–33 to the movement of the *air*, not the sound *per se* (cf. 446b7: ὡς γιγνομένης τῆς φορᾶς ἐν τῷ μεταξύ, 446b9: φερόμενον τὸν ἀέρα, 446b30–447a1: δοκεῖ δ' ὁ ψόφος εἶναι φερομένου τινὸς κίνησις: sounds seems to be a change *of the thing moving*).

15 Zeno Eleaticus DK29 A29 with Huffman (2005: 136) for discussion.

16 He considers just such a problem at *Sense and Sensibilia* 6.445b3–446a7 and solves it with an appeal to "potential" versus "actual" perception. Cf. Johnstone (2013: 639).

17 Cf. Everson (1997: 1–12).

18 In what sense this is reproduced is a matter of great debate, with the terms "literalist" and "spiritualist" positions now having gained wide currency; cf. Caston (2007: 247–63) for overview.

19 Cf. *On the Soul* 2.8.420a12 regarding water not reaching the "connate" air when we hear things underwater (οὐκ εἰσέρχεται πρὸς αὐτὸν τὸν συμφυῆ ἀέρα).

20 *On the Soul* 2.8.420a4–5: ἀκοῇ δὲ συμφυὴς ἀήρ· διὰ δὲ τὸ ἐν ἀέρι εἶναι, κινουμένου τοῦ ἔξω ὁ εἴσω κινεῖται. For the hearing mechanism being of air: cf. *On the Soul* 3.1.425a4–5, *Parts of Animals* 2.10.656b17, *Generation of Animals* 5.2.781a24.

21 See Hicks (1907: 380–1) for discussion.

22 2.12.424a17–21: ἡ μὲν αἴσθησίς ἐστι τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης, οἷον ὁ κηρὸς τοῦ δακτυλίου ἄνευ τοῦ σιδήρου καὶ τοῦ χρυσοῦ δέχεται τὸ σημεῖον, λαμβάνει δὲ τὸ χρυσοῦν ἢ τὸ χαλκοῦν σημεῖον, ἀλλ' οὐχ ᾗ χρυσὸς ἢ χαλκός. Cf. Democritus' wax imprint analogy for perception, reported by Theophrastus, *De sensu* 51.1–3; cf. the wax-imprinting analogy in regard to memory at Plato, *Theaetetus* 191c–d and Aristotle, *On Memory* 450a29–32.

23 2.12.424a21–24: ὁμοίως δὲ καὶ ἡ αἴσθησις ἑκάστου ὑπὸ τοῦ ἔχοντος χρῶμα ἢ χυμὸν ἢ ψόφον πάσχει, ἀλλ' οὐχ ᾗ ἕκαστον ἐκείνων λέγεται, ἀλλ' ᾗ τοιονδί, καὶ κατὰ τὸν λόγον. "And similarly the perception of each sensible is acted upon by the object which has color, flavor, or sound, but not in the way that each of those sensible things are spoken of, but in the way that each possesses a particular quality and are in accordance with their form/proportion".

24 Pitch is discussed at 2.8.420a31–420b4. For later expansions of these binary qualities of sound, see Burnett (1991: 63).

25 For the role of the awareness of the perception in any act of perception, see especially *On the Soul* 3.2.425b12–25, *Nicomachean Ethics* 9.9.1170a29–30 with Caston (2002) and Sisko (2004) with the response of Caston (2004).

26 Theophrastus, *De sensu* 12 (ἀπορήσειε δ' ἄν τις ἐξ ὧν λέγει πρῶτον μέν, τί διοίσει τὰ ἔμψυχα πρὸς τὸ αἰσθάνεσθαι τῶν ἄλλων. ἐναρμόττει γὰρ καὶ τοῖς τῶν ἀψύχων πόροις ...) regarding perception in general. At 20 Theophrastus says that Empedocles' idea of "effluence" (*aporrhoē*) may work for the other senses (hearing may be assumed here), but not for touch and taste. At 21 he discusses hearing more specifically. Cf. Guthrie (1965: 238–9).

27 Aristotle poses a related question at *On the Soul* 2.12: can sound or any sensible affect those unable to perceive it? His answer feels decisive: "neither light and darkness, nor sound nor smell do anything to bodies, but rather their medium, i.e. the air containing the thunder splits the wood", i.e. not the thunder itself (οὔτε γὰρ φῶς καὶ σκότος οὔτε ψόφος οὔτε ὀσμὴ οὐδὲν ποιεῖ τὰ σώματα, ἀλλ' ἐν οἷς ἐστίν, οἷον ἀὴρ ὁ μετὰ βροντῆς διίστησι τὸ ξύλον, 424b10–12). Perception is often given as the criterion that separates animals from other living beings (e.g. *Sense and Sensibilia* 1.436b10–12).

28 τοῦτο γὰρ αὐτὸ λείπεται ζητεῖν (regarding Empedocles' account of hearing, with Stratton's translation modified).

29 2.8.420a6–7: οὐ γὰρ πάντῃ ἔχει ἀέρα τὸ κινησόμενον μέρος καὶ ἔμψυχον.

30 *Generation of Animals* 2.6.744a1–5: ἡ δ' ὄσφρησις καὶ ἡ ἀκοὴ πόροι συνάπτοντες πρὸς τὸν ἀέρα τὸν θύραθεν, πλήρεις συμφύτου πνεύματος, περαίνοντες δὲ πρὸς τὰ φλέβια τὰ περὶ τὸν ἐγκέφαλον τείνοντα ἀπὸ τῆς καρδίας.

31 Cf. *Parts of the Animals* 2.9.656b24, 3.4.666a12, *Generation of Animals* 2.6.743b25–32 with Peck (1953: 592) for further references.

32 For the role of connate *pneuma* in hearing and perception generally, cf. Peck (1953: 590–3),

Johansen (1998: 156–7) and Nussbaum (1978: 143–64). In present debates over so-called literalist versus spiritualist interpretations of Aristotle's views on perception, *pneuma* is hardly a centrepiece. Cf. Sorabji (1974, 1992), Burnyeat (1992, 1995) and Everson (1997) for the terms and Caston (2005) 245–6 for further bibliography. But contrast Beare (1906: 336): "if we could discover all the properties and functions of *sumphuton pneuma*, we should have penetrated to the inmost secrets of [Aristotle's] sense-perception" (quoted at Peck 1953: 593).

33 Cf. Everson (1997: 140–1), Peck (1953: 589–93).

34 Cf. Caston (2009: 323): "[*Phantasia*] signifies the capacity through which things are made to *phainesthai*, to appear or seem to us to be the case". Cf. Nussbaum (1978: 221–69). Other recent interpretations include Schofield's (1992: 252) "non-paradigmatic sensory experiences". Cf. Modrak (1987: 82), Frede's (1992: 282) "synthesis … of sense-perceptions", and Lorenz's (2006: 119) return to translating it as "imagination".

35 3.3.429a1–2: ἡ φαντασία ἂν εἴη κίνησις ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γιγνομένη. Note that although perception is "always" true (e.g. *On the Soul* 3.3.427b12), *phantasia* admits error (e.g. *On the Soul* 3.3.428b2–4). See especially Caston (1996).

36 *On the Soul* 3.9.432a31–b1, *On Dreams* 1.459a16–18 with Caston (1996: 43–4). Thus the imagined sounds of the previous section (seeds, cry, strum) consist of "seemings" (*phantasmata*) not actual perceptions (cf. for example 3.3.427b17–20). The same goes for memory (e.g. *On Memory* 1.450a10–13) and dreams (e.g. *On Dreams* 1.459a18–21).

37 Cf. Plato *Republic* 602b6–8 regarding the same magnitude appearing (*phainetai*) to be not the same when viewed from nearby and faraway, with Lorenz (2006: 65–6).

38 Cf. Anaxagoras on the role of the size of the animal and sense organ in perception at Theophrastus, *De sensu* 29.

39 For perceptions being correct as opposed to *phantasmata* that can admit error, see n. 35: the hearing mechanism registers a *logos* that is almost always true perception; that that *logos* "seems to be", e.g. a guitar strum, admits mistakes. For the role of *phantasmata* in *human* knowing cf. *Parts of Animals* 4.10.686a27–32, *On the Soul* 1.1.403a8–10, 3.7.431a16–17, 431b2–10.

40 By which I mean strictly *phantasmata*: might a great deal of confusion about *phantasia* arise from a similar tendency in Aristotle to fall back upon common usage instead of a newly restricted one? Cf. Everson (1997: 180) who suggests an "official" and "more comprehensive sense" for *phantasia*. Regarding sound (*psophos*) Aristotle still observes customary usage even if hearing is an irreducible aspect in his own account (*On the Heavens* 290b34–6, *On the Soul* 2.8.420a21–3): it would be pedantic to do otherwise.

41 Nussbaum (1978: 255).

42 δοκοῦσι δὲ χαίρειν αἱ μέλιτται καὶ τῷ κρότῳ, διὸ καὶ κροτοῦντές φασιν ἀθροίζειν αὐτὰς εἰς τὸ σμῆνος ὀστράκοις τε καὶ ψήφοις. He goes on to express uncertainty about their hearing but I agree with Balme's (1991: 363 n. c.) interpretation that it regards "whether they hear this sound at a distance". I purposely have selected bees as an example since they lie at the heart of the question of *phantasia*: see n. 54.

43 Cf. Aristotle, *On the Motion of the Animals* 8.701b33–4: "the origin of motion, as we have said, is pursuit or avoidance in action" (ἀρχὴ μὲν οὖν, ὥσπερ εἴρηται, τῆς κινήσεως τὸ ἐν τῷ πρακτῷ διωκτὸν καὶ φευκτόν).

44 Cf. Aristotle, *On the Motion of the Animals* 8.702a17–21 with Nussbaum (1978: 221–69), the

"chain of movers" passage (cf. Lorenz 2006: 119). Cf. Welsch (1987: 381–88).

45 Cf. Everson (1997: 161, n. 42) regarding the need to differentiate a *phantasia* of a white object from a perception of it: the difference seems to be that when one sees the colour white *as* something (e.g. pleasurable, painful, plain, etc.), this is the working of *phantasia*.

46 καὶ γὰρ αἴσθησιν ἑκάτερον τῶν μερῶν ἔχει καὶ κίνησιν τὴν κατὰ τόπον, εἰ δ' αἴσθησιν, καὶ φαντασίαν καὶ ὄρεξιν· ὅπου μὲν γὰρ αἴσθησις, καὶ λύπη τε καὶ ἡδονή, ὅπου δὲ ταῦτα, ἐξ ἀνάγκης καὶ ἐπιθυμία.

47 αἱ δὲ διὰ τῶν ἔξωθεν αἰσθήσεις τοῖς πορευτικοῖς αὐτῶν, οἷον ὄσφρησις καὶ ἀκοὴ καὶ ὄψις, πᾶσι μὲν τοῖς ἔχουσι σωτηρίας ἕνεκεν ὑπάρχουσιν, ὅπως διώκωσί τε προαισθανόμενα τὴν τροφὴν καὶ τὰ φαῦλα καὶ τὰ φθαρτικὰ φεύγωσι. But lest Aristotle sound too modern here, it is well to remember that he goes on to say that perception is not *just* for survival, but for living *well* (εὖ, 437a1), at least for those animals with intelligence (*phronesis*). Cf. the striking statement at *Generation of Animals* 1.23.730a32–b5.

48 An Aristotelian example: cf. *Nicomachean Ethics* 3.10.1118a20–2.

49 Aristotle, *Sense and Sensiblia* 1.438b12–16 regarding a severing of the passages to the eye. Cf. Galen's vivisections on animals and the different reactions he observes when he touches the brain as opposed to the heart (*On the Doctrines of Hippocrates and Plato* 1.6.4–12 De Lacy).

50 For "proximal" theories of sound that identify "sounds with sensations, which can only exist in the mind of a perceiver", see Johnstone (2013: 640ff.).

51 But see above n. 47 regarding perception's role in partaking in knowledge.

52 Theophrastus fr. 293 FHSG = Plutarch, *On Listening to Lectures* 2.37f–38a: … περὶ τῆς ἀκουστικῆς αἰσθήσεως, ἣν ὁ Θεόφραστος παθητικωτάτην εἶναί φησι πασῶν.

53 "Quasi-action" in the sense of not moving but being "moved", e.g. emotionally.

54 The passage, which contains textual as well as interpretive issues, is *On the Soul* 3.11.428a8–11, where Aristotle explores the possibility that the simplest animals, namely ants, bees and grubs, do not have the capacity of *phantasia* at all. I agree with those who are more cautious about the context of Aristotle's language here: cf., e.g. Nussbaum (1978: 236), "His *dokei d'ou* in that passage expressed uncertainty, and 3.11 may be seen as a resolution of the question in favor of granting [*phantasia*] to all self- movers". Caston (1996: 44): "Aristotle says there *seem* to be animals that have sensation, but not *phantasia*… . But he never endorses this view in his own voice. On the contrary, evidence outside the chapter confirms his commitment to strict coextension: *phantasia* belongs to every animal". Cf. *On the Soul* 3.10.433b28–30 with Caston (1996: 23, n. 9).

55 But the nature of Aristotle's hesitation remains interesting, since he is continually changing his mind about the psychic capacities of these insects: insects have all five senses at *History of Animals* 4.8.534b15, while at 627a15 he expresses some uncertainty about bees hearing (discussed above); cf. *Metaphysics* 1.980b23, *Parts of the Animals* 650b26 and 488a10. So the hesitations regarding *phantasia* are part of a general hesitancy about these insects and their capacities. What then was Aristotle imagining about these insects at 428b8–11? Wedin (1988: 41) imagines insects of this sort are those "for which perception involves no cognitive features" and "fail to exhibit even the slightest intentional or quasi-intentional behavior". (Quoted at Everson 1997: 177, n. 86 with the objection that "it is not at all clear what is supposed to count as a 'cognitive feature' here or how an activity lacking any such feature can be classed as perception at all".) Here too seems to be the problem of "just sound".

56 *Republic* 7.531b regarding "those good fellows who torment and torture their strings, racking them on the pegs" (τοὺς χρηστοὺς … τοὺς ταῖς χορδαῖς πράγματα παρέχοντας καὶ βασανίζοντας, ἐπὶ τῶν κολλόπων στρεβλοῦντας).

57 "Both put their ears before understanding" (ἀμφότεροι ὦτα τοῦ νοῦ προστησάμενοι). But cf. Aristotle *On the Soul* 1.1.403a8–10, 3.7, 431a16–17, b2–10, *Parts of Animals* 4.10.686a27–32, for the role of *phantasia* in human noetic functioning, with Nussbaum (1978: 265–9) and Caston (1996: 42, n. 47).

58 For "seeing sounds", see especially Creese (2010: 50–80). I would like to thank Colin King for his comments and encouragement on an earlier draft of this chapter.

6
Greek acoustic theory

Simple and complex sounds

Andrew Barker

The Greeks never recognized acoustics as a separate branch of enquiry; there was no science called *akoustikē*, acoustics, parallel to such disciplines as *optikē*, optics, or the musical triad of *harmonikē*, *rhuthmikē* and *metrikē*. Scientists, philosophers and other theorists nevertheless made serious efforts to investigate the phenomenon of sound.[1] They tried to work out what sounds are, considered as items in a world of matter and movement, how they are caused, how they travel from place to place, what distinguishes sounds of different pitch or volume, what is going on in our bodies when we hear them and so on; but they almost always did so under the aegis of other kinds of investigation, especially in their musical enquiries and studies of sense perception.[2] Although their discussions usually focus on the causes and behaviour of "simple" sounds, that is, sounds treated as though each existed in isolation from all others, they did not completely ignore situations in which two or more simultaneous sounds interact. Some such situations figure prominently in musical contexts and have often been discussed by modern scholars; others have received less attention than they deserve.

This chapter is structured in two main parts: the first sketches the development of the main features of Greek acoustic theory, applied, as it typically was, to simple sounds, and in the second I turn to the topic of "complex" sounds, those conceived as being the products of several sounds in combination.

General acoustics and simple sounds

Enquiries into the nature and causes of sound go back to the fifth century BCE. Several Presocratic cosmologists touched on the subject in connection with their theories about the workings of the senses. They may have examined it more fully elsewhere, but we cannot be sure, since almost all our relevant information is derived, directly or indirectly, from Theophrastus' study of earlier opinions on sense perception.[3] If we leave questions about hearing aside, evidence for their ideas about sound itself is very limited. We can see, for instance, that they shared the view that sound is something that travels from its source to the ear, but so far as we know, only two of them specified the physical form which this "something" takes; elsewhere it is identified only as *phōnē*, "voice".[4] One who specified it is Diogenes of Apollonia, who stated that the air in the ears is moved by the external air (*De sensu* 40), from which we can infer that this movement in the external air constitutes the sound. The other is the atomist Democritus, for whom what travels from the source is a stream of the atoms that constitute air. Even his account is complicated by the report of Aetius that the air's atoms "roll along together" with the fragments of voice (*phōnē*), apparently implying that the "fragments of voice" are distinct from the atoms of air. I do not know what we should make of this. It is true that in a generalizing statement at *De sensu* 59, Theophrastus says that all the people he has mentioned thought of sound as a movement of the air, but this is not borne out by his accounts of them individually; where information was lacking he may have simply assumed that what was conceived as moving was the air, since by his own time this view was universally accepted.

Empedocles' account of the process of hearing (*De sensu* 9) incorporates another idea that became a staple of the later tradition. He supposed that hearing involves the arousal of a sound inside the ear itself; the air within it "resonates inside when it is moved by the voice". This happens when an internal appendage which Empedocles calls the *sarkinon ozon*, the "fleshy sprout", is set in motion and beats the air in the ear against its solid wall, thus creating a sound or resonance (*ēchos*[5]). In this case at least, then, a sound is caused by an impact between the air and some solid body. We do not know whether Empedocles thought that sounds occurring outside the ear originate in the same way; it seems likely, although according to Diogenes Laertius (DK60 A1) the first person to identify the cause of sound as an impact on the air was Archelaus, much later in the fifth century. The idea had a long history after his time; later writers almost unanimously agree that the cause of a sound is always an impact between a body and a suitable medium, usually the air.

Archelaus may have been developing a thesis attributed to his teacher, Anaxagoras, that voice occurs "when breath falls against solid (i.e. stationary

and resistant) air, and is carried as far as the ears by the turning-back of the impact".[6] If this report is reliable, and if I understand it correctly, it marks a new way of envisaging the movement by which a sound is transmitted. In the accounts of Diogenes and Democritus, what travels from the source to the ear is something bodily, a puff of air or a stream of atoms; Empedocles probably took a similar view, and other Presocratics may also have assumed that the movement is that of a corporeal traveller. Anaxagoras' reference to "solid" (*steremnios*) air seems to anticipate a doctrine most influentially set out by Aristotle, according to which an impact on the air will cause a sound only if the air which it strikes is not dispersed by the blow but "stands fast". The movement will then pass through the air as something like a vibration, while the air itself remains in the same place.[7] Such a conception became orthodox in later writings, although elaborations and interpretations of it may not always be accurate reflections of Aristotle's own thought;[8] it is a significant advance on the earlier view.

The thesis that sounds are caused by impacts reappears in a fragment of the early fourth-century Pythagorean Archytas.[9] He attributes the theory to unspecified predecessors, who "reflected that it is not possible that there be sound, if an impact of some things against one another does not occur; they said that an impact occurred whenever things in motion came upon and collided with one another" (trans. Huffman). Commentators have often assumed that these predecessors are fifth-century Pythagoreans, but Huffman is probably right to argue that "in the late fifth century a consensus had emerged that impacts of objects were required for sound to arise and it is this consensus that Archytas is presenting", and that "Archytas is drawing on a general Greek tradition of exploration into acoustic issues rather than just a Pythagorean one".[10] Where Pythagoreans stand out from other acoustic theorists is not in their studies of the causes of sounds as such, but in their development of a theory[11] about the determinants of sounds' most culturally and philosophically important attribute, pitch. The theory is essentially linked to the conception of sound as movement, since it makes a sound's pitch dependent on the speed at which it travels; "it is clear", says Archytas, later in the same passage, "that quick movement makes a high-pitched sound and slow movement a low-pitched sound", and he seeks to prove this through a series of examples. But he also seems to conflate the determinants of pitch with those of volume. After correlating swift movement with a strong impulse from the source, he says of vocal sounds that "the one carried by a strong breath will turn out to be loud and high, the one carried by a weak breath quiet and low". On this basis, it would be impossible for a sound to be simultaneously high pitched and quiet or low pitched and loud, which is evidently false. The difficulty was subsequently resolved by Plato, who followed Archytas in

making pitch dependent on speed of travel, but treated volume as determined by the amount of air set in motion (*Timaeus* 80a–b); this thesis too became canonical in the later tradition. Aristotle introduced a further refinement of the "speed" hypothesis. Plato, and perhaps others before him, had identified a sound's pitch with the speed at which it moves. Aristotle argues, on the contrary, that although the high pitch of a sound, for instance, is indeed determined by the rapidity of the corresponding movement in the air, the pitch is not constituted by the speed; the movement's speed is only its cause.[12]

Archytas does not make it clear whether he is attributing this theory of pitch, too, to his predecessors, but there is some evidence – although it is not conclusive – for thinking that it was pioneered by an earlier Pythagorean, Hippasus, in the first half of the fifth century.[13] It has close connections with the way in which fifth-century and later Pythagoreans, followed by many others, represented the sizes of musical intervals, that is, as ratios of numbers. Pitches an octave apart, for instance, stand to one another in the ratio 2:1, those at a perfect fifth in the ratio 3:2, and those at a perfect fourth in the ratio 4:3. Evidence for these ratios was found in relations between relevant dimensions of sound-producing objects. If other factors are held constant, the pitch produced, for example, from a pipe or a string of a given length is an octave higher than the pitch from a pipe or string of twice that length, and so on for the other ratios; and experimenters claimed that the same results would be found in all cases, no matter what means were used to produce the sounds. Thus each musical interval is universally and intrinsically tied to one particular ratio. The "speed" theory of pitch provides a simple way of interpreting these results. The octave "is" the ratio 2:1 in the sense that the higher of its pitches travels at exactly twice the speed of the lower.[14]We know, of course, that this hypothesis is mistaken, and no Greek theorist arrived at the modern conception of vibration-frequencies.[15] But in the context this hardly matters. The ratios that they attached to the intervals are exactly the same as those assigned to them in modern physics, and the arithmetical calculations that they performed on them, with few exceptions, are as acceptable now as they were in antiquity. Their theory of pitch gave them a basis on which they could confidently pursue their mathematical investigations and apply the results to musical structures, and so far as that enterprise is concerned, the fact – as we now know it to be – that the theory was erroneous is relatively unimportant.

By the time of Aristotle, Greek theorists had thus developed a workable account of the nature of sound and its causes, on which they could draw in their studies of the sense of hearing. They had also devised an explanation of variations in the most significant of its attributes, pitch, and a method by which they could express relations between pitches as ratios of numbers, enabling them to compare the "sizes" of musical intervals and to describe the

structures of musical systems with mathematical exactitude. In addition, the abstractness of numbers and systems of ratios allowed philosophers and scientists to transfer mathematical patterns of musical organization, conceived as paradigms of "harmoniously" integrated structure, out of the domain of sounds altogether, applying them in analyses, for instance, of well-blended colours, a healthy foetus, a virtuous soul and the perfect organization of the cosmos at large.[16] Early Greek speculations in physical acoustics, although sketchy and unreliable in some respects, proved remarkably fertile and spawned a surprisingly diverse brood of offspring.

Complex sounds

In the theories so far reviewed, each sound is typically treated as a single entity or event, which originates, along with its attributes, out of an impulse from a single source. It owes none of its characteristics to anything other than its own causes; and although completely isolated sounds seldom if ever occur in practice except under laboratory conditions, it was natural for Greek thinkers to conceive them in this way when the topic under investigation was sound in general. It was only when considering rather special kinds of acoustic phenomenon, or when complications were introduced by special features of a governing theory, that they turned their attention to sounds with a more complex constitution, that is, those composed from a combination of two or more sounds that at least in principle are separately identifiable. Several different kinds of cases are discussed in our sources, but although there are connections and similarities between the ways in which they are treated, no theorist offers a grand unifying theory of "complex sounds", and I shall not try to construct one on their behalf. I propose, instead, to present three case studies.

Concord and discord

The intervals whose ratios I have specified, the octave, fifth and fourth, were particularly important in Greek musical theory and performance. Notes separated by these intervals were fundamental to the structure of all regular scales,[17] and within the compass of an octave they alone were described in technical writings as *sumphōniai*, which we translate as "concords" or "consonances".[18] In writings of that kind they figure most often in discussions of scalar or melodic sequences, in which the two notes of a concord (or of a discord) are played or sung at different moments; this focus reflects the fact that the central element in Greek music was melody,[19] and that the structures

underlying melodies were therefore of most interest to the theorists. But when they set out to *define* what a concord is, they invariably do so by reference to cases in which the two notes are sounded simultaneously, and to the audible effect produced by their coincidence. Despite differences in wording, all writers from the later fourth century onwards define concord in effectively the same way, and it is easy to get the impression that this conception of it was set in stone from the very beginning. But this is an illusion, although it is one that neither I nor other modern scholars have done much to dispel.

Fifth-century writers certainly recognized the importance of the three principal concords, and thought of them as prime instances of the felicitous reconciliation of differences.[20] But the concept of *sumphōnia* remains vague, and with just one exception, none of them makes any attempt to clarify or characterize it. Our immediate sources for the exception are Ptolemy and Porphyry, who were relying – via an intermediary – on a report by Archytas about the work of his Pythagorean predecessors.[21] We shall revisit the passage in the section titled "The 'multiple impacts' theory," and for the present I shall note only a couple of significant points. First, these Pythagoreans' discussion of the relations between the two notes that form any of the three concords pivots on what they call "similars" (*homoia*) and "dissimilars" (*anhomoia*). That is, each of the notes incorporates an element that is similar to an element in the other, together with elements that are not. This evidently reflects the fact that in some sense the two notes work well together, but that they also differ; and according to the theory, the more concordant of these intervals are those in which the "dissimilarity" is smaller.

Secondly, the extent of the "dissimilarity" becomes clear only when the two notes are combined, so that elements of each contribute to their failure to achieve a perfect unity. The Pythagoreans use a verb to which Porphyry draws special attention, *summisgein*, to indicate this "combining". It implies that the two notes are not, as it were, just placed side by side, but are mingled or blended together in a more intimate way; we might think, by way of analogy, of a painter's blending of pigments, or of the mingling of flavours in a dish. We shall find that this hint that the two notes of a concord will somehow fuse together when they are sounded simultaneously became central to the later accounts of *sumphōnia*.

A major text from the first half of the fourth century draws, in the same context and in a comparable way, both on the concepts of similarity and dissimilarity and on that of "blending". The passage, from Plato's *Timaeus*, contains idiosyncrasies and obscurities that I shall not consider, but its reminiscences of the Pythagorean conceptual scheme are unmistakable. It tells us that a form of explanation he has used to account for certain forms of motion applies also

> in the case of sounds, those that are swift and those that are slow, perceived as high and low in pitch, which sometimes travel in disharmony because of the dissimilarity (*anhomoiotēs*) of the movement set up by them in us, sometimes in concord because of its similarity (*homoiotēs*). For the slower sounds catch up with the movements of the earlier and swifter ones as the latter are dying away and have already attained similarity with the movements that the slower sounds impart to them as they subsequently impinge on them. And when they catch up with them they do not disturb their motion by imparting a different one, but by imparting the beginning of a slower motion in conformity with that of the swifter sound when the latter is fading, and by attaching a similarity, they blend together[22] a single experience out of a high-pitched and a low-pitched movement.
>
> (Plato, *Timaeus* 80a–b)

Here the concept of blending is evidently of some importance in characterizing the outcome of the process that Plato describes. But as in the Pythagoreans' account, it appears only once, at the end of the passage, whereas similarity and dissimilarity are mentioned four times, and it is through the presence of the former and the absence of the latter that a concordant result is achieved. It seems that, in Plato's mind, the key relation between two notes that form a concord is still constituted by some sort of similarity between them, which (so the final sentence apparently implies) consists in the "fact" that their speeds (and hence their pitches) have become equal at the relevant point in the process.

Centuries later, Nicomachus objected to this account, on the grounds that no concord can be formed by a pair of notes that are similar, that is, ones whose pitches are the same; they must have different pitches and in this sense be dissimilar.[23] It is a cogent and indeed an obvious objection; and since several other features of Plato's conception are also highly problematic, it seems odd that we have no record of direct criticisms of it before the time of Nicomachus (around 120 CE). What we find instead is that allusions to similarity and dissimilarity in this context simply disappear, and that the concept of mixture or blending moves into the centre of the scene.

The pivotal passage is in Aristotle, *Sense and Sensibilia* 7, a long and complex discussion of the question whether two objects can be perceived by the same sense at exactly the same instant. (For more on Aristotle on sound, see Kidd, this volume.) He examines the matter from several different angles, but one firm conclusion that he reaches is this:

> [I]t is impossible to perceive two objects [*sc.* simultaneously] with the same sense unless they are mixed together. For a mixture purports to be one object; the perception of one object is one; and one perception is simultaneous with itself… . Now if the actual perception is one, it will say that its objects are one, and therefore they must have been mixed together. Then when they are not mixed, the actual perceptions will be two. But the actual activity of a single faculty in an indivisible time must be one, for the movement and exercise of a single faculty at a single instant must be one, and here there is just one

faculty. Hence it is impossible to perceive two things simultaneously with a single sense.

(Aristotle, *Sense and Sensibilia* 447b10–21)

At 448a8–10 Aristotle mentions the octave and the fifth as examples of mixtures whose ingredients cannot be perceived at the same time unless they are perceived as one. Then if we assume that the concordance of two sounds can only be perceived if they are heard simultaneously, it will follow that in our perception of them they must be mixed together so intimately as to form a unity. Later in the chapter (448a19–b17) Aristotle offers an argument to confirm the truth of that assumption, by refuting the hypothesis of some unnamed theorists that "the sounds do not arrive simultaneously but only appear to do so, and that the fact escapes us when the time [i.e. the temporal gap between their arrivals] is imperceptible" (448a19–22). Aristotle argues that the hypothesis must be mistaken, on the grounds that there can be no such thing as an imperceptible duration of time. Hence the notes of a concord must indeed be perceived simultaneously,[24] and by the previous argument must therefore be perceived as an undifferentiated mixture.

Post-Aristotelian definitions of concord and discord differ widely in expression, and in some cases their import is obscure. But Aristotle's arguments were very influential, and the resulting broad consensus can be illustrated in statements such as the following:

> Among notes we recognize some as concordant, others as discordant, the concordant making a single blend out of the two, while the discordant do not.
>
> (Euclid [attributed], *Sectio canonis* 149.17–20 Jan)

> Some systems are concordant and others discordant. They are concordant when the notes that bound them are different in magnitude [here equivalent to "pitch"], but when struck or sounded simultaneously mingle together in such a way that the sound they produce is single in form, and becomes as it were one sound. They are discordant when the sound from the two of them is heard as divided and unblended.
>
> (Nicomachus, *Harmonics* 261.22–262.6 Jan)

> People give the name "concordant" [*sumphōnoi*], which they derive from that most beautiful of sounds, the voice [*phōnē*], to those which create a homogeneous impression on the hearing, "discordant" [*diaphōnoi*] to those which do not.
>
> (Ptolemy, *Harmonics* 10.25–28 Düring)[25]

Aristotle's conception of a genuine mixture entails that none of its ingredients can be separately detected, and one might object that this is not true of the notes forming a concord. We can perceive that the relation has a special smoothness (musicians rely on this phenomenon when tuning their instruments), but we can also perceive each of the notes in its own right. By itself the objection is unhelpful, but we can make progress by noting that the

mixture seems to be more perfect in Aristotle's sense in some cases than others. Specifically, if the two notes of an octave, played simultaneously, are similar in timbre and volume, it is sometimes hard to be sure whether we are hearing two notes or just one, whereas in the cases of the fifth and the fourth it is relatively easy to pick out each of the two individually. This fact did not escape the Greek theorists, and in the next section we shall see how some of them addressed the point. It involves an aspect of acoustic theory that we have not so far considered, one which attempts, among other things, to explain what is happening at a physical level when two sounds are "blended" in the relevant way.

The "multiple impacts" theory

In some texts, mostly clustered around the late fourth century BCE and the early third, we find a hypothesis about sounds, or at least about sustained sounds such as musical notes, that goes beyond the simple thesis that a sound is a movement in the air, caused by an impact. The fullest version of it is in a passage quoted by Porphyry from a certain Heraclides.[26] Porphyry does not identify this writer more precisely, and at first sight it is natural to assume that he is the fourth-century philosopher Heraclides of Pontus. But Hans Gottschalk argued against this assumption, assigning the passage to a later Heraclides, and most subsequent editors and commentators have followed his view; in an earlier publication, I adopted it myself.[27] I no longer find Gottschalk's arguments persuasive, and although I cannot defend my position here, I am now fairly confident that the passage comes from the fourth-century writer. The relevant part of it starts by describing a visual phenomenon:

> Often, when a cone [here a spinning top] is in motion, and there is one white or one black spot on the cone, the result is that there seems to be a circle on the cone, of the same colour as the spot. And again, if there is one white or black line, and the cone is in motion, the result is that the whole surface appears to be the same colour as the line, since the spot does not appear to be just one part of the circle or the line just one part of the surface, but the sense of sight is not capable of attaining accuracy in such a case.
>
> (Porphyry, *Harmonics* 30.28–31.6)

Heraclides now considers sounds and hearing on the analogy of the visual example:

> He says that the same sort of thing happens in the case of hearing too; hearing, indeed, is in even greater confusion than sight. For if someone stretches a string, he says, and after striking it allows it to resonate, the result will be that he hears certain notes, and that the string still continues its swinging motion, bending back and forth in the same place, in such a way that the string's movement is more evident to sight than to hearing. With every

> blow on the air that it strikes, a sound will necessarily fall on the hearing. But if this is so, he says, it is clear that each of the strings projects several notes. Then if each note occurs in the impact, and if it is the case that the impact does not occupy time but is at a boundary of time, it is obvious that between the impacts corresponding to the notes there must be silences which do not occupy time. Hearing does not detect the silences, because they are not capable of moving the hearing, and also because the intervals [of time] are small and imperceptible. But since the notes are closely successive, they give the impression of a single sound extended over some length of time, just as when the line on the spinning cone makes the whole surface seem the same colour, since our sight does not detect when the line appears at each place as it moves together with the cone, but because of the swiftness of the movement we receive the impression of it on every part of the cone, as the line moves.
>
> (Porphyry, *Harmonics* 31.6–26)[28]

According to this theory, any sound that is perceived as sustained and continuous is in fact constituted by a rapid sequence of sounds, each produced by a separate impact on the air, between which are intervals of silence so brief that we cannot detect them. Each of them is therefore a "complex" sound, although its complexity is different from the kind involved in a concord, since its elements are successive rather than simultaneous. But in at least one source it is closely linked to a theory of pitch, and in that source and several others it is also associated with statements about concords.

The first of them appears in the *Sectio canonis* insecurely attributed to Euclid, which in my view dates to around 300 BCE.[29] After asserting that a sound's production requires impact and movement, the writer continues:

> Thus since all sounds occur when some impact occurs, and since it is impossible for an impact to occur unless movement has occurred beforehand, and since some movements are more closely packed together, others more widely spaced, those which are closer packed producing higher notes and those which are more widely spaced lower ones, it follows that some notes must be higher, since they are composed of closer packed and more numerous movements, and others lower, since they are composed of movements more widely spaced and less numerous… . We must therefore assert that notes are composed of parts.
>
> (Euclid [attributed], *Sectio canonis* 148.6–149.7 Jan)

Here, then, the "multiple impacts" thesis that Heraclides expounds is exploited in the service of a theory of pitch. Whereas Archytas, Plato, Aristotle and many others held that a note's pitch is determined by its speed of transmission, this author makes it dependent on the rapidity with which its constitutive movements follow one another. If they are more closely packed together the note is higher in pitch, and if they are more widely spaced it is lower; or to put it another way, the greater the number of such movements there are in a given time, the higher pitched the note will be.[30]

Next, the writer forges a connection between the notes' more or less

numerous "parts" and the ratios that Pythagoreans and others had associated with musical intervals:

> Now all things that are composed of parts are spoken of in a ratio of number with respect to one another, so that notes, too, must be spoken of in a ratio of number to one another.
>
> (149.8–11)

This implies that the ratio assigned to any interval is the ratio between the number of "parts" in the higher of the relevant notes and the number of "parts" in the lower, where each "part" is one of the note's constituent movements. For instance, if the ratio of the perfect fifth is 3:2, this is because during any stretch of time in which two of the lower note's movements occur, there will be three of those belonging to the higher. It is a clear, simple and ingenious hypothesis; from a modern perspective, it also has the merit of not being very far from the truth.

The writer goes on to classify ratios into three types, and to argue – on rather unpersuasive grounds – that those of the concords must always belong to one or other of just two of them. This phase of his discussion need not concern us here. Nor does his characterization of the concords themselves introduce anything new. He says only that in concords the two notes form a unified blend, whereas in discords they do not (149.17–20), and he makes no attempt to bring the "multiple impacts" theory directly to bear on the phenomenon of concordance itself. Other sources, however, make up for this deficiency; although they give no explicit interpretation of the phenomenon in terms of the theory, the texts allow us to reconstruct the model they had in mind with reasonable confidence.

One piece of evidence appears in a convoluted stretch of argument about the special characteristics of the octave, in one of the pseudo-Aristotelian *Problems* (19.39).[31] In this interval, says the writer, "it turns out that *hypatē* [the lower note] has the same ending of the periodic movement of its notes [*sc.* as *nētē*, the higher]; for the second blow on the air made by *nētē* is *hypatē*". In the light of the "multiple impacts" theory we can give these remarks a tolerably clear interpretation. The reference to "periodic movement" alludes to the forwards and backwards motion of a string, which figures in Heraclides' account, and the string makes an impact on the air in each of these phases. The ending of such a movement occurs upon the completion of the second phase; and if the two notes begin simultaneously, the ending of a movement of the lower note, *hypatē*, always coincides with an ending of *nētē*, the higher. This is so, as the writer rather enigmatically explains, because – since for every impact of *hypatē* there are two impacts of *nētē* – the second impact of *nētē* "is" *hypatē*, both in the sense that the two coincide, and in the sense that the time-gap between successive instances of the second impact of *nētē* is identical with that

of a complete periodic movement of *hypatē*. We might put it by saying that the lower note of the octave is implicitly or potentially present in the higher.

Just before these statements the writer points out that the same does not hold of the other concords, although he expresses this very awkwardly: "In the case of the other concords the ending of one or other of the notes is incomplete, finishing half-way". What I think he means can be illustrated by the example of the perfect fifth, in which the ratio between the rates of impact is 3:2. Here, the second impact of the lower note coincides with the third of the higher, but at the moment when the two impacts occur, the higher note is only halfway through one of its periodic movements; it has completed a first cycle and started on the next, but the backwards movement that would complete it has not yet occurred. This will be true also when the concord is that of the perfect fourth (ratio 4:3).

Thus the intimacy of the relation between the two notes of a concord is connected with the situation existing at the instants when their impacts coincide. But the criteria the writer uses only distinguish the octave from the other concords, and mark no distinction between the fifth and the fourth; nor does he explain why the completion of a periodic movement should be relevant to the perceived character or quality of an interval. We can get a much clearer (and slightly different) picture from Archytas' report about earlier Pythagorean ideas, mentioned in the previous section. There, as we saw, the notes forming a concord contain both "similar" and "dissimilar" elements, and in concords where there is less dissimilarity, the concordance is better or more perfect. But the passage is not merely descriptive. It sets out a well-defined procedure by which the extent of the dissimilarity in each of the concords can be assessed, and they can be arranged in order of merit.

The procedure is arithmetical. We take the ratio of a given concord, and from each of its terms we subtract a unit. This pair of units constitutes the "similarity". The "dissimilarity" is constituted by the sum of the numbers left in each term. In the fifth, for example, the terms are 3 and 2; we subtract a unit from each and add up what remains, concluding that the dissimilarity is 3. In the octave (2:1) the dissimilarity is 1, and in the fourth (4:3) it is 5. Where the dissimilarity is smaller the concord is better; hence the octave is the best of the three, the fifth comes second and the fourth comes last.

Two features of this procedure seem particularly odd. One is the implication that the numbers appearing in the ratios are numbers of discrete items that can be added and subtracted. The other is the initial subtraction of a unit from each term, since the order of excellence would be exactly the same if this step were omitted. But both of them fall into place if we link the procedure with the "multiple impacts" theory, and with aspects of the scenario we extracted from the Aristotelian *Problems*. Let us again take the perfect fifth as an example. Its

ratio is 3:2, and according to the theory this means that there are three movements of the higher note, equally spaced out in time, within the period in which there are two of the lower. Suppose that their first impacts are simultaneous. With the fourth impact of the higher note and the third of the lower, their impacts will coincide again, but in the intervening time there are two impacts of the higher note and one of the lower, no two of which occur at the same instant. Thus the pair of units subtracted from the terms to represent their "similarity" can be identified with the pair of impacts that occur simultaneously; and the sum of the remaining numbers, in this case three, is the number of non-coincident impacts that occur between successive pairs of these "similars". They constitute an interference that disrupts the notes' similarity, and the more of them there are, the less perfect is the concordance.[32]

When construed in this way, the method by which these Pythagoreans assessed the relative perfection of the concords becomes intelligible and indeed quite persuasive, not least because in the limiting case, where every impact of each note coincides with an impact of the other, and hence there is no "dissimilarity", the two notes will have identical pitches and will fuse perfectly into one another as a single note. Admittedly there is no definitive proof that this interpretation is correct, since our sources do not mention the "multiple impacts" theory in connection with these Pythagorean calculations. But it makes sense of an otherwise mysterious procedure, and I can see no other way of explaining its peculiarities. If it does indeed offer the right perspective on the procedure, the idea that a note involves many successive impacts and not just one, together with this way of connecting the numbers of movements with the ratios of intervals, must predate Archytas and have been devised, at the latest, around the end of the fifth century. Although we have no other evidence of its existence at so early a date, there are no good reasons for thinking the scenario impossible.

Instruments and resonating devices

Our final case study differs from the others in focusing on issues connected with musical timbre. Few Greek theorists even mention such issues, but they occupy the bulk of the pseudo-Aristotelian *On Things Heard*, and its extensive discussion of one special and (one might think) rather insignificant topic is unparalleled elsewhere. The main pipe of the *aulos*, a reed-blown instrument played everywhere in the Greek world, was usually a straight tube with a cylindrical bore. Some *auloi*, however, had an animal's horn (usually from a cow or a bull) fitted to the lower end of the pipe (we might compare it with the bell of a modern brass instrument or the flared end of a clarinet or an oboe); and the author presents a long and detailed study of the attributes of these

horns and their acoustic effects. They are mentioned first at 810b8–10 (= Porphyry, *Harmonics* 70.25–6 Düring); the main discussion follows at 802a17–b18 (= 71.32–72.34).[33] It is important to note at the outset that the writer systematically distinguishes the acoustic phenomena involved into two kinds: there is the "voice" (*phōnē*) that emerges from the instrument, and there is the "resonance" (*ēchos*, not to be confused with *ēchō*, "echo"), which the horn contributes to it. Implicitly, then, there must be a third kind too, the sound to which the horn adds its resonance to create the "voice".

Much of the passage is concerned with the qualities that horns must have if they are to produce the best effects, and with their selection and preparation.

> The horn's natural growth should be even and smooth, and it should not have sprung up quickly – for such horns are bound to be softer and more porous, so that their resonances are dispersed and lack coherence when they emerge from them, and they do not ring out in the same way because of the softness and diffuseness of the pores – nor, on the other hand, should their natural growth be retarded, nor should their natural constitution be dense and hard and rigid. For wherever the resonance strikes an obstruction as it travels, it is arrested there and no longer passes through to the outside, so that the resonances emerging from horns of this sort are muffled and uneven.
>
> (802a19–30 = Porphyry, *Harmonics* 72.1–10)

The writer goes on to assert that the resonance travels in a straight line, confirming this by reference to what happens when a length of timber is tapped at one end. The resonance will travel continuously in a straight line to the other end unless there is a crack in the wood, in which case it comes to a halt there. Next he comments on a process designed to improve the horns' resonance.

> Baking the horns contributes a lot to the pleasantness of the voice. For those that have been baked more have a resonance like that of pottery, because of the hardness and dryness caused by firing; but if one bakes them too little, they emit a gentler resonance because of their softness, but cannot ring out so well.
>
> (802b1–6 = Porphyry, *Harmonics* 72.21–25)

For the same reason, he continues, people (presumably the instrument-makers) select horns from animals of specific ages:

> For those of old animals are dry and hardened and loose grained, while those of young ones are very pliable and contain a great deal of moisture. As we have said, the horn should be dry, even in density, smooth and with straight pores, since under these conditions most of all, the resonances travelling through it will also be dense, smooth and even, and so will their impacts on the air.
>
> (802b6–14 = Porphyry, *Harmonics* 72.25–31)

Throughout the passage, the writer thinks of the "resonances" (*ēchoi*) as

travelling through the material of the horn, not through its central cavity, and the prescriptions he lays down are designed to ensure that they pass through it unobstructed, and without being diverted from a straight course or split up and dispersed in different directions. Under these conditions they will remain cohesive and will impinge firmly and evenly on the external air, and as a result will "ring out" (*gegōnein*) well.

We might therefore expect that when a horn was attached to an *aulos*, the purpose was to enhance the instrument's "voice" (*phōnē*) by amplifying it or making it "ring out" more clearly. But this is not what the writer says.

> By contrast with other instruments, if the resonances (*ēchoi*) of the horns are dense and continuous when they impinge on the air, they make the voices (*phōnai*) dim.
>
> (802a17–19 = Porphyry, *Harmonics* 71.32–72.1)

That is why, he continues, "the horn's natural growth should be even and smooth", and so on. Similarly, we are told a little earlier that the resonances of horns or attachments made of bronze "make the notes from the instruments less clear".[34] In that case it may seem surprising that instruments were ever fitted with these devices, but although the clarity and "brightness" of a sound was generally regarded as a virtue in musical performance, the writer also explains why sounds with less clarity are sometimes preferable. After stating what it is for a sound to be "bright" (*lampros*), and under what conditions bright sounds are produced, he continues:

> In this connection it appears that what are called "grey" voices are no worse than "white" ones, for rougher voices that are a little confused and do not have too much conspicuous brightness are more suited to the emotions, and to the later times of life; and at the same time they [bright sounds] are not so easy to control, because of their intensity, for what travels forcefully is hard to manage. Nor is it easy to tense or relax them as one wishes.
>
> (802a1–7 = Porphyry, *Harmonics* 71.20–25)

He evidently takes "white", in its application to sounds, to pick out the same attribute as "bright", and Aristotle tells us that sounds with the opposite quality were called "black". A "grey" voice or sound, which is "rougher" than a white sound and "a little confused", must therefore be intermediate between these extremes, and the task of the horn is to moderate the natural brightness of the "voice" of the *aulos* to which it is attached; it neither enhances the brightness nor eliminates it altogether.[35]

How, then, does a good horn, with its clear and continuous resonance, achieve this effect? The answer comes in the passage in which we find the first reference to horns, where the reduction in clarity that their resonances induce is mentioned by way of analogy with the effects of certain kinds of speech impediment, and is followed by examples of other sorts.

> For just as pieces of bronze or horns, when they resonate, make the notes from the instruments less clear, so too in the case of speech the impulses of breath emitted from the mouth create serious lack of clarity when they are not evenly formed. Not only do they display their own lack of clarity, but they also impede the notes that are perfectly articulated, since their movement in the region of the ear is uneven. This is why we understand better when we hear one person than when we hear many people saying the same thing at once, just as happens also with strings, and [we distinguish the sounds] much less well when someone plays the *aulos* at the same time as [someone plays] the *kithara*, because the voices are confused by the others. This is particularly evident in the case of the concords, for each of the sounds is concealed by the other.
>
> (801b8–21 = Porphyry, *Harmonics* 70.25–71.2)

Despite minor obscurities, the main thesis of this passage is plain enough; when two or more sounds occur simultaneously they "impede", "confuse" or "conceal" one another (compare the description of "grey" sounds as "a little confused"). The writer's last example takes us back to the topic of concords, where, as we saw, the intermingling of two notes makes it hard or impossible for us to distinguish either of them individually, and although it is differently expressed, the phenomenon to which the present passage refers is evidently the same. As the writer understands the matter, the "voice" of an *aulos* fitted with a horn is also the product of two distinct sounds. As long as the resonances remain in the fabric of the horn itself, they are treated as self-contained movements; that is, although they are presumably caused by the movement in the main pipe of the instrument, they are conceived as having an independent existence of their own, and not as parts or aspects of that movement. When they emerge from the pores of the horn and strike the external air, however, their impacts create sounds, and at this point they interact with the sounds emitted from the *aulos* itself, merging with them to create the resulting "voice", in which the resonances confuse or conceal the character of the other sounds and thereby reduce their clarity and brightness.

As we have seen, some sources, including the *On Things Heard*, use the "multiple impacts" theory to explain what goes on in the world of matter and movement when a concord is produced; but we have no comparable model for the interplay of movements when complex sounds emerge from an *aulos* equipped with a horn. If the writer had been challenged on this issue, perhaps he would have tried to harness the theory to this task too (possibly with the help of his account of acoustic "roughness" at 803b2–18 = Porphyry, *Harmonics* 74.20–33). But we have no evidence that he or any other Greek theorist ever made the attempt.

1 If we ignore those concerned with exclusively musical issues, the following are perhaps the most important Greek passages on sound. Archytas frag 1; Plato, *Timaeus* 67a–c; 79e–80b; Aristotle, *On the Soul.* 419b4–421a7; Aristotle (attributed), *Problems* 11 (and cf. 19); Aristotle (attributed), *On Things Heard (De audibilibus)*; the introductory passage of Euclid

(attributed), *Sectio canonis*; Heraclides in Porphyry, *Harmonics* 30.1–31.26; Aelianus in Porphyry, *Harmonics* 33.16–37.5; Ptolemy, *Harmonics* 1.3; Porphyry, *Harmonics* 1.3 (which incorporates long passages from several other authors); Boethius, *De institutione musica*, 1.3, 14, 30–31. (Boethius wrote in Latin, but is included because much of this work is based on a lost Greek treatise by Nicomachus.) Except for the last two, they are all translated, with notes, in Barker (1989), although this includes only excerpts from the passages from *On the Soul* and the *Problems*). For an annotated translation of Porphyry, *Harmonics* (including new translations and notes for Aristotle (attributed), *On Things Heard*, Heraclides and Aelianus), see Barker (2015), and for Boethius, see Bower (1989). On Archytas, frag. 1, see also Huffman (2005: 103–161); on Aristotle (attributed), *Problems* 11, see Hagel (2015); on Ptolemy, *Harmonics*, 1.3 the most trenchant commentary is Porphyry, *Harmonics* 1.3, but see also Barker (2000: 33–53).

2 The one major exception is the work known to us as *On Things Heard*, mistakenly attributed to Aristotle by Porphyry, whose long quotation from it is all that survives. Hans Gottschalk argued that it was written by Strato in the third century BCE (Gottschalk 1968), and most later scholars have accepted his view. We shall investigate some passages of this treatise in the section titled "The 'multiple impacts' theory."

3 Theophrastus, *De sensu*. As far as I know there is no English translation of this work of Theophrastus. For a French translation see Tannery (1930: 348–380). The most important passages are printed in Diels & Kranz, *Die Fragmente der Vorsokratiker* (hereafter DK), as follows: Alcmaeon, DK24 A5 = *De sensu* 25, A6 = Aetius 4.16.2; Empedocles DK31 A86 = *De sensu* 9, cf. 21, A93 = Aetius 4.16.1, cf. Plutarch, *Concerning the Face Which Appears in the Orb of the Moon* 929c, quoted in part at DK31 B42; Anaxagoras, DK59 A92 = *De sensu* 28–30, A106 = Aetius 4.19.5; Archelaus, DK60 A1 = Diogenes Laertius 2.17; Diogenes of Apollonia, DK64 A19 = *De sensu* 40–41, A21 = Aetius 4.16.3; Democritus, DK68 A126a = Porphyry, in Ptolemy, *Harmonics* 32.6–14, A127 = Scholion to Dionysius Thrax 482.13 Hilgard, A128 = Aetius 4.19.3, A135 = *De sensu* 53, 55–57.

4 As in most contexts, "voice" rather than "sound" is probably the correct translation of *phōnē* here. It is reasonable to assume that these theorists took all sounds to involve movement of much the same sort, but the sounds on whose reception they mainly focus seem (at least in Theophrastus' representation of their work) to be the utterances of a human voice.

5 The word *ēchos* plays an important role in a passage discussed in the section titled "Instruments and resonating devices."

6 DK59 A106 = Aetius 4.19.5. On the return of a voice to its utterer, see also Theophrastus' report on Democritus at *De sensu* 53 = DK68 A135.

7 Aristotle, *On the Soul* 419b18–27. Cf. Kidd, this volume.

8 See for instance Aristotle (attributed), *Problems* 11.6 (889a34-b18), according to which successive portions of air jostle against their neighbours and push them against the next in turn, setting up a "shunting" motion that radiates out in all directions from the origin. There is no indication that Aristotle thought of the process in this way. Similarly, no transfer of matter from place to place is involved in the account of a sound's movement along the length of a piece of timber at Aristotle (attributed), *On Things Heard* 802a = Porphyry, *Harmonics* 72.10–15 Düring, but it too contains no suggestion of a "shunting" process.

9 DK47 B1. For an improved text and extensive discussion, see Huffman (2005: 103–61).

10 Huffman (2005: 134, 135).

11 Or theories; a second hypothesis that probably has roots in early Pythagorean thought is discussed in the section titled "The 'multiple impacts' theory."

12 Plato, *Timaeus* 67a–c; Aristotle, *On the Soul* 420a–b. These passages are discussed in detail at Porphyry, *Harmonics* 46.3–49.4 Düring. Porphyry's discussion is translated with notes in Barker (2015: 173–9, with fuller treatment in the Introduction, 22–7).

13 For the evidence and discussion, see Zhmud (2012: 276–7, 309–12); Horky (2013: 247–50); cf. Burkert (1972: 377–8). Writers of the Hellenistic and Roman periods repeatedly assert that this and the theory of ratios mentioned below originated with Pythagoras himself; but the first writer to make such a claim is Xenocrates (frag. 87 Isnardi Parente), and scholars have commonly treated it as a fiction, constructed in the service of his attempt to interpret Plato's doctrines as developments of a "Pythagorean" mathematical philosophy. For an eloquent defence of the tradition that Pythagoras pursued significant work in acoustic and harmonic theory, see Zhmud (2012: 52–3, 270–1, 285–6, 288–93).

14 For a rather fuller discussion of these points and references to the sources, see Barker (2007: 25–9). The sense in which one speed can be said to stand in some ratio to another is meticulously – indeed pedantically and tediously – explained in a passage by a certain Aelianus, quoted at Porphyry, *Harmonics* 36.9–37.5 Düring (translation in Barker 2015: 149–51).

15 A theory that in some respects resembles it is discussed in the section titled "The 'multiple impacts' theory."

16 Colours, Aristotle *Sense and Sensibilia* 439b25–430a6; the foetus, Hippocrates, *Nutriment* 1.8.2; the soul, Plato, *Timaeus* 43d–e, 47b–d, 80b; cosmology, Philolaus frag. 6 (DK44 B6 = frags. 6 and 6a in Huffman 1993), Plato, *Timaeus* 35b–36b. These are prominent examples, but there are many more.

17 For a brief account of the basic structures, see West (1992: 160–2).

18 In poetry and other non-technical literature, *sumphōnia* and its cognates are often used more informally, to indicate musical or (metaphorically) non-musical "agreement" of any kind.

19 The other principal factor was rhythm, which is beyond the scope of this chapter. It is true that melodies were usually accompanied by an instrument, and sometimes – probably much more often than our sources reveal – the accompaniments included notes other than those of the corresponding part of the melody. See especially Plato, *Laws* 812d–e; Aristotle (attributed), *Problems* 19.39; Plutarch (attributed), *On Music* 19 (1137b–d); with Barker (1995). But the musical theorists say very little about these matters.

20 See the passages from the Hippocratic *Nutriment* and from Philolaus cited in n. 16 above.

21 Ptolemy, *Harmonics* 14.1–15.2 Düring, a passage of vigorous criticism from which it is hard to reconstruct the theory criticized; Porphyry, *Harmonics* 107.15–112.3 Düring, of which the first part (107.15–108.21, also printed as DK47 A17) presents a clearer and more objective account. For an annotated translation of the passage of Porphyry, see Barker (2015: 327–35).

22 Plato's word for "blending", *sungkerannuein* (or *sungkerannunai*), is not the same as that of the Pythagoreans, but the senses and implications of the two verbs are virtually identical.

23 Boethius, *De institutione musica* I.30–1.

24 The same conclusion is reached on different grounds at Theophrastus frag. 716.103–5 Fortenbaugh, cf. 64–80, where the notion of a concord as a blend or mixture also plays an important role.

25 The musical theorists do not ask whether or not the notes of a discord can be heard simultaneously. If Aristotle had accepted their accounts of discordance, he could only have maintained consistency by claiming that such simultaneity is impossible; and since he denies that any time-lapse is imperceptible, he would have had to assert that we can detect the temporal gap between the notes if we pay sufficient attention. But in fact he never ventures into this thorny territory.

26 Porphyry, *Harmonics* 30.1–31.26 Düring, also printed as Xenocrates frag. 87 Isnardi Parente, although in fact only the first few lines are likely to be connected with Xenocrates.

27 See Gottschalk (1968: 450–52); Barker (1989: 230).

28 The same theory, in a version that seems to be derived from Heraclides, appears at Aristotle (attributed), *On Things Heard* 803b34–804a8.

29 Debate continues about the date of the treatise, and on the possibility that some parts of it, including the introduction, were added later to the original text. For discussion, see Barbera (1991: 1–62); Barker (2007: 364–410, particularly 364–70). The work is translated, with notes, in Barker (1989: 191–207).

30 None of the other writers who adopt the "multiple impacts" theory overtly subscribe also to this theory of pitch. It is perfectly possible to accept the view that higher pitches are associated with more frequent movements, while maintaining that the immediate cause of a note's higher pitch is the speed of its transmission; the writer of the *On Things Heard* (n. 28 above) explicitly does so, as does Porphyry (*Harmonics* 54.13–21). In another of the "multiple impacts" theory's rare reappearances in a later period (Boethius, *De institutione musica* I.3, probably derived from Nicomachus), the writer hovers between the two hypotheses, mentioning both but coming down firmly on neither side.

31 All, or almost all, of the material in book 19 can be dated to the end of the fourth century or the early third.

32 The writer of the *On Things Heard* (n. 28 above) relates concords to the "multiple impacts" theory in much the same way, but does not say that the non-coincident impacts disrupt them; he merely says that they "escape our notice".

33 For a complete translation and notes, see Barker (2015: 235–7).

34 810b8–10 (= Porphyry, *Harmonics* 70.25–6). "Less clear" (*asaphesterous*) is John Wallis's emendation of the manuscript text, which has *saphesterous*, "clearer", but the emendation can be regarded as certain. It is essential if the statement is to make sense in its context, and to be consistent with the passage quoted above.

35 See Aristotle, *Topics* 106a23–26, 106b4–8. In the latter passage Aristotle seems to deny that the adjective "grey" is used of sounds, and says that if there is a term for an acoustic attribute intermediate between white and black, it is "dull" (*somphos*, which in other connections means "spongy", "porous"). Perhaps Aristotle's belief that sounds were never described as "grey" (*phaios*) reflects the usage's restriction to the esoteric jargon of instrument-makers and professional musicians.

7
The soundscape of ancient Greek healing

Colin Webster

Introduction

This chapter examines the soundscape of Greek healing practices as they were transforming in the late fifth and early fourth centuries BCE, exploring the ways in which competing groups used sounds to manufacture and reinforce various therapeutic relationships.[1] During this period, practitioners developed diverse sonic strategies to produce different effects, whether to create community, increase anticipation or establish authority. The plague-fighting paeans that had traditionally been used in moments of public crisis now met with increasingly popular Asclepian healing cults, which deployed both songs and silence to demarcate different therapeutic spaces and separate successive stages in the processes of recovery. Greek mystery cults and independent religious healers began to employ foreign-sounding phonemes in their curative songs, thereby providing audible indications of exotic expertise. At the same time, the Hippocratic author of *On the Sacred Disease* was rejecting the use of such songs in medicine, denigrating those who used incantations as "magicians, purifiers, beggar-priests and charlatans" (*On the Sacred Disease* 2 = 6.354, ed. Littré).[2] Yet Hippocratic practices incorporated sound in other ways, whether through the use of public speeches, establishing the silent sickroom as the idealized space of prognosis, or treating the body as an echoing chamber of noises to be heard, discerned and understood. The intersection of sound and healing was thus shared widely in this time period, and both a concern with and anxiety about auditory practices extended across healing types and groups.

In short, sound is one of the features that structured ancient medical

experiences, and healers leveraged it to create hierarchies of authority as they guided patients through their own bodily sensations. More than simple historical interest, then, examining the acoustic signatures of ancient therapies presents us with an opportunity to appreciate how healing practitioners could elicit certain responses and create certain power dynamics through multiple sensory means. Such analysis can help us move beyond some generic gesture towards the placebo effect when trying to understand how ancient treatments could have provided relief. It reveals that implicit aetiologies of disease were audible in the respective sonic signatures of each sect, as the sounds incorporated in each practice implied certain assumptions about the nature of illness, its boundaries and its causes. Moreover, this approach helps illustrate how diffuse the line is between what qualifies as therapy and what prefaces treatment, since the clamour, chatter, songs and silences enveloping the sick could perform just as considerable a role in a therapeutic programme as did drugs, diet and exercise.

Music and medicine

The strongest connection between sound and healing is seen in the role that music long played as part of treatment. From our earliest evidence, music was a part of medicine.[3] The Ebers papyrus, an Egyptian medical text from *c.*1550 BCE, includes three references to incantations, which appear in remedies against roundworm, in a spell against pain and purulency, and as part of a treatment for leucoma.[4] Similarly, a Mesopotamian cuneiform text from the Neo-Babylonian period (seventh to sixth centuries BCE) that relates a mythical tale of a pain-causing worm was probably used as an incantation in dental surgery.[5] In the Greek world, the connection between music and medicine remained. At *Odyssey* 19.455–9, the sons of Autolycus use song as a styptic: when a boar gores Odysseus, they bind his wound before stanching the bleeding with an "incantation" (*epaoidē*). Similarly, when Pindar describes the birth of Asclepius in his third Pythian Ode, he outlines four fundamental medical tools: gentle incantation, soothing potions, topical treatments and surgery. He even expands the use cases for chants, suggesting that they can treat both congenital sores and seasonal fevers.[6] Consequently, when *On the Sacred Disease* 1 (= 6.354, ed. Littré) condemns magicians, purifiers, beggar-priests and charlatans for treating disease "with purifications and incantations" (*katharmoisi te kai epaoidēsin*), we cannot take for granted that this author is attacking a group that always provided therapies categorically different from those of doctors. In previous generations, healers probably would have used some incantations as part of their practice. Nevertheless, a few decades after

this Hippocratic text, Socrates seems to create two categories of standard medical interventions when discussing men who grow ill from intemperate regimens, setting drugs, cautery and surgery on one side and incantations (*epōidai*) and amulets on the other.[7] In other words, by the end of fifth century BCE, songs were being cleaved from a physician's toolkit.[8]

There were nevertheless some groups for whom music played a large role in conceptions of health and the body, most notably the Pythagoreans. Precisely when they developed these notions is far from clear.[9] It was Philolaus in the fifth century BCE who first incorporated harmony into his broader metaphysical programme, establishing it as the ordering principle of the cosmos, while also articulating the mathematical ratios of the diatonic scale, 9:8, 4:3, 3:2 and 2:1.[10] Although this could have provided fecund ground for a harmonic understanding of health, his aetiology of disease instead proposes that our bodies are constituted out of the "hot", while attributing disease to three *archai*, bile, blood and phlegm (as well as the excess and defect of heat, nutriment and cooling).[11] In general, Pythagorean doctrines tended to link music to ethical and psychic treatment. For instance, Aristoxenus mentions a certain Cleinias of Tarentum who calmed his anger with the lyre,[12] and Damon produced a treatise in which he associates different modes and rhythms with various ethical qualities.[13] Similarly, in the *Timaeus*, Plato makes harmony the foundation of health and dissonance the cause of disease – but roots this more specifically in the discord between body and soul (*Timaeus* 82a–b; cf. 87c1–89d3), and in the *Symposium*, the physician Eryximachus propounds an aetiology of illness based on similar harmonic assumptions (*Symposium* 185e5–188e3). Although later Pythagoreans expand on notions of musical therapeutics, these ideas did not seem to make a large impact on the medical practices described within the Hippocratic corpus.[14] Only two of the more than sixty Hippocratic texts use harmony to conceptualize how the body functions, and only *Regimen*, a somewhat atypical text, employs the concept more broadly.[15]

According to *Regimen*, fire and water are the primary components of both body and soul, and the reciprocal forces between these substances (motion and nourishment, respectively) must be kept in order to maintain health. The author then argues that the required balance accords with the actual ratios of mathematical harmony, claiming that the commingling of substances in the body must produce an octave, a fourth or a fifth, or they will fall into a useless scale (*Regimen* 1.8 = 6.482, ed. Littré). Whereas the musical analogy plays neither the sole nor dominant explanatory rubric of this treatise, *Regimen* is still the only Hippocratic text to insist that sound has a physiological effect on the body, claiming that "through hearing, when a sound falls upon it, the soul is shaken, and it exerts itself, and by exerting itself, is warmed and dried"

(*Regimen* 2.61 = 6.574–6, ed. Littré). The text also mentions how exercises of the voice, whether talking, reading or singing, can likewise affect the body. Nevertheless, there is no indication that any Hippocratic physician actually prescribed acoustic therapies on the above model, and the corpus as a whole is devoid of prescriptions for people to be sung to or chanted over. It is therefore tempting to assume that when the author of *On the Sacred Disease* attacks those using incantations, he is rejecting the place of sound in medicine altogether. Yet his critiques seem slightly more targeted than this, designed to attack other healers offering competing cures.

For instance, *On the Sacred Disease* ridicules the impiety of those who claim the ability to draw down the moon, produce an eclipse, or conjure both drought and storm (*On the Sacred Disease* 4.1–21 = 6.358, ed. Littré), and these details align with several boasts of Empedocles, who also claimed to know "*pharmaka* that are a defence against evils and old age".[16] The Hippocratic author also derides charlatans who forbid baths, black clothes and crossing one's limbs, and who prohibit eating red mullet, black-tail and other foods, prescriptions that overlap (although not perfectly) with certain Pythagorean pronouncements.[17] At the same time, however, the Hippocratic author also says that his opponents ascribe disease to "divinity and the *spiritual*" and attempt to cure it with purifications and cleansings (*On the Sacred Disease* 3.12–15 = 6.358, ed. Littré), and this resembles the type of oracle-mongers whom Adeimantus describes in Plato's *Republic* (2.364b4–365e5),[18] and whom Aristophanes lampoons in both *Birds* (959–91) and *Knights* (1015–20). Similarly, the *Derveni Papyrus*, an allegorical interpretation of Orphic poetry, blames disease on avenging *daimones*, who can be removed by "the enchanting song of the magi".[19] Therefore, rather than attacking an individual, the Hippocratic author is more likely painting a set of opponents with a broad brush, glossing over manifold doctrinal discrepancies, while targeting practitioners with a few things in common: they are independent healers or healing groups, operating without civic or temple support, who therefore compete against physicians for patients in places like the *agora*. Yet these were not the only healing practitioners who used songs and sounds in the process of recovery. We should therefore not simply accept a binary between healers who used sounds (magico-religious) and those who did not (Hippocratic). In order to fully appreciate the sonics of healing in Classical and Hellenistic Greece, we need to expand beyond the simple use of incantations in medical contexts to examine the broader use of sound and music in response to danger and disease, paying particular attention to how these songs would have actually sounded, as far as reconstruction will allow. In doing so, we can see how certain sonic practices encouraged purposeful results.

Paiēōn, paeans and participatory sonics

One of the most striking examples of ancient sonic cures is the public deployment of healing hymns (*paianes*) in the face of plagues and other moments of collective crisis. It is somewhat unclear whether the deity (*Paiēōn*) or the healing song (*paiēōn*/*paian*/paean) came first, but it is evident that the two are intimately and etymologically related; in fact, Burkert suggests that the song and the god were originally all but identical.[20] In his early instantiations, Paiēōn appears to be an independent healing deity,[21] but by around the sixth century BCE at least, he became increasingly associated with Apollo, so much so that Paiēōn morphed into an Apollonian title.[22] Eventually, the adjective *paiēōnios*/*paiōnios* even came to denote "healing" more generally,[23] with the result that the deity Asclepius too obtained the epithet *paiēōn*, because of his status as a healer and his close connection to Apollo.[24] In other words, even in the fifth century BCE, the most notable healing gods still bore a recognizable etymological connection to song.

From early on, the Greeks used paeans to restore health in moments of communal anxiety and suffering. For example, in the first book of the *Iliad*, after the Achaeans return Chryses' daughter to him, they end the plague by sacrificing to Apollo, pouring libations and "singing a beautiful paean (*paiēōn*), hymning the far-shooter".[25] Similarly, Sophocles' *Oedipus Tyrannus* opens with a plague afflicting Thebes, as the citizens surround the palace steps and fill the town with "incense, paeans and groans".[26]Outside of the Greek literary tradition, Terpander reportedly appeased civil strife in Sparta with a paean, whereas Thaletas led one to avert a plague.[27] The Dionysia festival may have been established in response to an epidemic (of erections) afflicting the Athenians,[28] and Aristoxenus' *Life of Telestes* relates how the Delphic oracle prescribes singing twelve spring paeans each day for sixty days after an epidemic of insanity assails the women of Lochri, which led to much paean-writing in Italy.[29] The scholia to Dionysius the Thracian even states: "The paean is a song dedicated to Apollo and Artemis, addressed in supplication as a defence against plagues, civil strife or battle lines".[30] Paeans could also be used as victory songs and sympotic entertainment, but performing paeans in response to public health crises represented a wide cultural practice. (See Power in this volume for the paean as one of several "performative soundmarks" in use in ancient Greek ritual.) Up through the fifth century BCE at least, the ancient Greeks could respond to collective illness with collective song.

Understanding how these songs sounded helps illuminate why this practice endured and why it might have been perceived as efficacious. First, we should remember that plagues are not simple health events, but social phenomena,

and ancient plagues maintained boundaries different than our own epidemics. They included not only human illness and death, but could also extend to failing crops, animals perishing in the fields, women dying in childbirth and social operations grinding to a halt.[31] The use of paeans to combat both plagues *and* civil strife illustrates the close proximity and overlap of these two phenomena.[32] Thus, in the *Iliad*, when the Achaeans and their animals get sick, we can consider the discord within the Greek camp not merely as a result of the plague, but a manifestation of the illness in the social body itself. As such, when the Achaeans sing a paean after returning Chryses' daughter, they are not simply asking for health to be reinstated, nor celebrating their release from disease, but *performing* health through a communal act, functionally rebuilding the social order that the plague collapses.[33]

Part of the potency of paeans – and the reason why they can do their specific healing work – resides in their particular acoustic signature. To be sure, the communal nature of these healing songs must have produced an impressive effect in its own right, and any collective song has the potential to engender a sense of commonality and order. Yet one of the sole formal features that marks a hymn as a paean would have amplified the song's efficacy: the repeated cry of *paian*, *iē* or *iēpaian*. The diffuseness of the genre means that the inclusion of even these declarations does not function as a mandatory requirement, but these exclamations provide a backbone for many paeans, as both the actual performers and those in the audience could shout these cries in unison.

The Erythraian *Paean to Asclepius* can serve as an *exemplar* to help understand the general acoustic characteristics of these songs (albeit with the caveat that paeans do not all follow its mould). The hymn was found inscribed on a marble stele at the Temple of Asclepius at Erythras (380–360 BCE)[34] and seems originally to have been performed as part of civic procession. It begins by praising Apollo *Paian*, before turning to Asclepius and his progeny (including Machaon, Podaleirius, Iaso, Aigla, Panakeia, Epione and Health). It ends by asking the deity to protect the city as a whole (which the youths performing the paean represent):

> Sing, youths, of famous Paian,
> son of Leto, long-range archer,
> hear us, Paian!
> Who generated great relief for humans
> through union in love with Koronis
> in the land of Phlegyas,
> – hear us, Paian! – Asklepios,
> famed divinity,
> hear us, Paian!
> From whom descended Machaon,

Podaleirios and Iaso,
– hear us, Paian!
And lovely Aigla, Panakeia too,
by Epione, and the apple of his eye,
most holy Health –
hear us, Paian! Asklepios,
famed divinity,
hear us, Paian!
I beseech you: look kindly on
our city with its choral worship,
hear us, Paian!
Grant that we enjoy the sun's
abundant light accompanied
by most famous and holy Health,
please, O Paian, Asklepios,
famed divinity,
hear our prayer![35]

Ritual performances often assimilate the content of the song and the performance group, collapsing of the distinction between the two. This is more obviously the case in songs with a strongly narrative bent, where the mythical past and the performative present come into union. In this particular hymn, Asclepius' depiction as the head of a household recasts the performance community as a single healthy *oikos*, thereby drawing the broader civic body into his familial structure. The most powerful sonic feature of this hymn – the repeated cries of "hear us, *Paian*!" – only supports such an organizing effect.

Although such shouts could have sounded bold and triumphant in the martial contexts in which paeans arose, in a situation of illness the iterative pleas more closely resemble the imploring prayers of frightened populace, where groans blend together with requests for relief.[36] While echoing cries dramatize the fear and disorder produced by the disease, they simultaneously structure the song and its impact. In other words, the iterated request "hear us, *Paian*" performs social cohesion.[37] This audible effect would have been amplified in so far as the repeated shouts allow any attendant observers to join in the cry, thereby extending the symbolic civic collective beyond the youths performing the hymn to all those within earshot.[38] Through its particular sonic signature, therefore, the paean constructs an inclusive, enveloping space of healing that implies the boundaries of health and illness belong to a broader collective. As such, the hymn's final requests for beneficence towards the entire city and its choral worshippers mirrors the song's specific acoustic effects.[39] More than a simple appeal, then, the performance symbolically creates health by instantiating group order.[40] The iterated cries thus form the plaintive sounds of the sick and the structure on which the destabilized group can steady itself. That is, paeans can both stage a communal illness and enact

its collective cure,[41] as the communal sonic fabric makes audible the notion that illness is a collective phenomenon.

The sonics of Asclepian healing cults

Although the above hymn can illuminate how publicly sung paeans might have generated a certain auditory and social fabric, inscriptions of the text have been discovered in multiple locations, including at the healing cult of Asclepius at Erythrai, at Ptolemais (97 CE), in the Athenian Asclepieion (first to second century CE) and in Dion, Macedonia (second century CE).[42] These various find spots indicate that the paean was used relatively widely in the religious practices of Asclepieia. These healing cults arose around the end of the sixth century BCE, starting with the founding of a temple at Epidaurus, and over the next half century they spread across Greece, with sites located in and around many powerful cities, including Athens, Sparta and Argos. By the end of the fourth century BCE, there were more than two hundred Asclepieia across the region. Yet whereas the processional performance of these hymns leveraged their participatory sonics to instantiate a type of communal health, healing cults repurposed these same paeans to facilitate the recovery of individuals, albeit by reintegrating these individuals into the wider collective. Inscriptions and votive offerings attest to the wide array of illness that were addressed and treated in the cult, including – although not limited to – issues concerning fertility, blindness, lameness, gout, grievous wounds, tattoo removal and baldness. To do so, Asclepieia used sound in prescribed and targeted ways, employing it as a key mechanism with which to demarcate space and treat illness.

Much of our evidence about the rituals performed comes from well after the end of the fifth century BCE, but nevertheless it is still possible to construct a rough idea of cult practices in this early period. The most marked feature of Asclepieia was incubatory healing, whereby suppliants slept in the *abaton* overnight (sometimes for days) in hopes of being visited by the god in a dream and receiving a cure. Yet many stages led up to this critical act. Suppliants would have arrived at the healing temples – often having travelled quite a distance – and would have purified themselves before entering the sacred precincts. Inside, hymns, prayers and paeans would have echoed in the open spaces as visitors made sacrifices and offerings to the god.[43] Along with the Erythraian *Paean to Asclepius* quoted above, inscriptions at Epidaurus provide even better evidence that the cult used songs as a preparatory therapeutic.[44] Multiple paeans were inscribed on stone pillars and plaques around the temple precinct, including a *Hymn to the Mother of the Gods*,[45] *Ariphron's Paean to*

Hygieia and *Isyllos' Paean to Apollo and Asclepius*.[46] Several were even inscribed with musical notation overtop, which strongly suggests that actual performances occurred in the temple (perhaps with instrumental accompaniment).[47] Whether such songs ever amounted to a formal liturgy is hard to discern. *Ariphron's Paean to Hygeia* is prefaced with the words "at the first hour", which suggests that prescribed hymns may have been sung at certain times during the day.[48] That said, pseudo-Lucian paints a slightly less standardized picture when he states that suppliants could compose their own hymns to Asclepius, or sing one composed by Isodemus of Troizen or Sophocles, and Philostratus the Younger also mentions composing hymns for the god.[49] Although pseudo-Lucian is writing in the second or third century CE, and Philostratus in the third, Sophocles allegedly wrote a *Paean to Asclepius* and housed the healing cult when it first arrived at Athens in 420 BCE during the Eleusinian mysteries.[50] This provides at least anecdotal evidence that hymns and paeans formed some part of Asclepian cultic practices from early on.[51]

In general, the Asclepieia treated the individual's illnesses, and, unlike public crises, these maladies were not eliminated by a collective act of singing, since the reinstatement of communal order does not *per se* represent the reconstitution of the individual sick body to health and wholeness. Nevertheless, the acoustic signature of the paean would have implicated the individual's recovery within a broader civic frame, thereby providing an implicit, but audible, ideology of disease as a phenomenon crossing the divide between individual and group. Such interpenetration between individual and collective health gets demonstrated in multiple ways. For example, a *lex sacra* prefacing the Erythraian paean quoted above suggests that those visiting the healing temple could sing the hymn for their own purposes, but only after repeating *iē paian, iē paian* three times before exclaiming "Lord Apollo, protect the young people". [52] Thus, even when someone sang the song to alleviate his or her own illness, the paean wove their personal ailment into collective (and future) health of the *polis*. Indeed, another hymn found inscribed at Epidaurus, *Isyllos's Paean to Apollo and Asclepius*, originally honoured the establishment of a new law, and several accompanying paragraphs supply instructions for how to conduct both the civic processional and an annual re-performance. And yet the song praises both Asclepius' intervention into the Spartan-Macedonian conflict and his successful treatment of Isyllos' own son.[53] As such, the paean demonstrates the potential overlap between civic and personal wellness, revealing the murky line between collective sonics and the liturgical practices of individuals.

It should be said that for suppliants visiting healing cults, however, the songs were not supposed to enact recovery, as much as they functioned as an

auditory preface to the coming cures. Whereas the sound of efficacy in case of plagues was song itself, the effective space of an Asclepieion was silent. At night, the echoing chants of healing gave way to quiet, as suppliants slept the *abaton*, waiting to be visited by the god in a dream. At Epidaurus in particular, testimonies of previously healed visitors – the so-called *iamata* texts – hung on plaques along the walls.[54] As such, the audible voices of the general precinct gave way to the legible voices of the inscriptions now murmuring inside the visitors' heads (at least for those suppliants who could read). Aristophanes describes the ensuing silence of incubatory healing as enforced, with priests encouraging quiet as they moved through the hushed space (Aristophanes, *Wealth* 668–72). In reality, a room full of sick bodies would have produced a considerable amount of noise (especially as people drifted off and snoring increased), but the collective quiet would have signalled a distinct therapeutic stage nevertheless. In fact, one side of the *abaton* at Epidaurus is constructed of columns, leaving it open to the surrounding air. As such, the silence itself constructed the space of healing as much as any physical barrier.[55] The quiet surely must have encouraged a far more personal interaction with the god, since just as the collective cries of *iē paian* allow for group engagement, silence too requires total communal participation, experienced and abided by all. As such, it establishes the expectation that fellow suppliants are having a meaningful interior interaction, thereby amplifying individual reflection and trust in the therapeutic efficacy. And if suppliants *expected* to be visited in a dream, the likelihood of it happening would be no doubt increased.

Even if the daily alteration between songs and silence formed the core sonic markers of Asclepian therapeutics, repetitions provided another crucial sonic technique in religious healing practice. Triple repetitions in particular signified potency, as seen in the inscription prefacing the Erythraian paean mentioned above. This practice forms a common element of cult ritual more broadly, with thrice-repeated cries acting as a particularly important aspect of the effective performance of religious song.[56] For our purposes, it helps illustrate how the sounds of religious healing overlapped with the sonic strategies employed by parallel but distinct groups of practitioners operating without direct attachment to either temples or civic bodies, namely magicians and mystery cults.

Mystery cult, the *Getty Hexameters* and the sonics of foreignness

It may be no surprise that healing practitioners who did not operate with stable civic sanction leveraged sound as part of a more general programme to

establish in-groups, create social distance and construct a highly specialized, secretive expertise. Although mystery cults and magicians constituted different constituencies with different sets of practices, they nevertheless shared certain sonic strategies in response to illness, most notably incantations that incorporated repeated phrases, consonants and nonsense sounds. At the same time, these groups all wove notions of health and sickness into far broader frameworks of benefits and evils, whether purity, happiness and reincarnation in the case of Orphic and Pythagorean cults, or wealth, public reputation and erotic success in the case of magical practitioners. The specific implications of utterances thus became even more imbedded in notions of secrecy and expertise, since it was unclear what the effects of imprecations might be or the source of the evil that they countered. The enigmatic sonic practices of magicians, oracle-mongers and mystery cults thereby audibly emulated aetiologies that cast disease as multi-causal, mutable and part of a broader spectrum of social and personal ills.

Many cults used a variation of the repetitive techniques seen in paeans. For example, Orphic tablets found in Pelinna contain the triple repetition of (the symbolically potent) milk, and this in turn aligns with the designation of the initiate as "thrice blessed":[57]

> Now you have died and now you have been born, thrice blessed one, on this very day.
> Say to Persephone that Bacchios himself freed you.
> A bull you rushed to milk.
> Quickly, you rushed to milk.
> A ram you fell into milk.
> You have wine as your fortunate honor.
> And you go beneath the earth, celebrating rites just like the other blessed ones.[58]

Another tablet from Thessaly includes the double repetition: "Male child of the thyrsos, Male child of the thyrsos; Brimo, Brimo; Enter the sacred meadow. For the initiate is without penalty".[59] Three bones plates found in Olbia have phrases written on them, including "life death life Zagreus Dionysus Orphics", "peace war truth lie Dionysus" and "Dionysus truth body soul", and these mantras were probably meant to be repeated.[60] The iteration of even common, quotidian words endows them with symbolic, powerful significance, especially when uttered alongside divine names. This technique can produce a semantics whose generic power is audible to everyone, but whose specific meaning is understood only by initiates. This sonic strategy can strengthen intra-group cohesion, while excluding the broader public. Although communal, public repetition fosters a sense that disease is a collective phenomenon, individualized repetition suggests that disease is mysterious, personal and unknown.

Mystery cults refashioned other sonic techniques used in *polis*-sanctioned

processionals to similar, more individualistic ends. For instance, the *Getty Hexameters* repeatedly call on *Paean* and his "averting charms" (*alexima pharmaka*)[61] to ward off evil, although in this instance it is unclear whether the god's name functions as a type of refrain or marks the beginning of four separate incantations collected together.[62] These fifty lines of (mostly) hexameter poetry are inscribed on lead tablets, and although the text's precise site of discovery is unknown, both its provenance and several linguistic cues suggest that it came from Selinus, Sicily around 420–409 BCE.[63] In contrast to the more public hymnic responses to illness, the hexameters suggest a far more complicated performance context. In fact, after explicitly referring to itself as a sung incantation, the text suggests that the hexameters may not have been performed after all, but hidden in a wall like a phylactery.[64] The folds of the lead ensure that the lines face inwards, both protecting and hiding them, which means the object was not put on public display, so if the hymns maintain efficacy over time, it is because the (imagined) performance sounds out in secret, repeating endlessly within its stone confines. The hexameters thus operate somewhere between a publicly performed poem and a written magical amulet,[65] as the "sound" of the performance has now potentially become metaphorical.

Despite instructions to be immured, however, the incantations preserved on these metal strips do preserve a distinctive sonic element that chimes best when uttered aloud: these are the so-called *Ephesia Grammata*, a series of *voces magicae* that arose at least by the fifth century BCE and lasted through the late Roman Empire. Prefaced with one of the text's four invocations of *Paean* and presented as a separate spell inside the broader frame of the incantation, the words crackle with power:

> [Paean, for you] in every direction are cure-bringing and exce[llent].
> … kataskia assia asia endasia
> a she-goat for milking … the she-goat from the g[arden] by force!
> And for the one who has the name of sw[eet] Tetragos,
> TETROAN lead, then, Tetrag[…].[66]

Bernabé argues that these nonsensical "*voces magicae*" (*kataskia assia asia endasia*) were originally coherent Greek and formed a mythical *historiola* written in hexameters, but a process of shortening and wordplay eventually turned them into metre-less, faux "divine names".[67] Although the *Getty Hexameters* provide one of the early examples, the process of transformation can be traced over the course of several hundred years, and by the time of Hesychius in the fifth or sixth century CE, the text had become *Aski, kataski, lix, tetrax, Damnamneus, Aisia* (Hesychius, *s.v. Ephesia Grammata*). Ancient Greek authors provided retrospective (folk) etymologies and religious

justifications for each of the words, but these ancient attempts mask the fact that throughout the history of the phrases, as Bernabé suggests, "There is deliberate preference for phonic play over semantic meaning".[68] The cacophonous and rhythmic iteration of the names supersedes any primary concern for either syntactic meaning or proper poetic metre.

Whereas the paeans and other temple healing songs repeat words or full phrases, the *Ephesia Grammata* repeat consonants and alliterative sounds, the hard "k"s collecting together, sibilants sliding into each other, while the rhyming *-ia* endings pulse along (before giving way to the softer "m"s and "n"s of *Damnamneus* in the later versions). In fact, the word *tetrax* in the *Getty Hexameters* seems to have been generated because of the jingling it produces with *aix*, and then *tetrax* itself produced its own clattering consonant cluster (*tetragos, TETROAN, Tetrago-*).[69] Although ancient sources produce retroactive explanations for this word, claiming that it references the "year" or represents a demonic name, the word is essentially meaningless.[70] Instead, the sounds signify strangeness (although still abiding by the rough formal structures of Greek), so that the foreignness itself generates much of the text's significance (as the false etymologies evince). At the same time, the percussive effects of the hard consonants make its mysterious power physically palpable. In marked distinction to the collective, participatory cries of the paean, these words create a linguistic barrier, wrapping the audience (even if just an individual) in a highly mysterious, specialized and technical language, unknown even to those who might utter the sounds. This can create a private space for in-group members, who carry these phrases as a shibboleth, although for individuals having the *Ephesia Grammata* chanted over top of them the privacy could be even more extreme, since the *voces magicae* construct a barrier even between them and their own bodies, as both the words and their machinations remain opaque and incomprehensible.

The particular effects of redoubled consonantal sounds extended far beyond the *Ephesia Grammata*. In the Archaic period, at least according to Clement of Alexandria, Branchus purified the Milesians, saving them from plague, by uttering the words *bedu*, *zaps*, *chthōm*, *plēktron*, *sphingx*, *knaxzbich*, *thuptēs*, *phlegmo*, *drōps*, with the internal iterations of the "k" sounds echoing through the phrase.[71] In the Roman world, Cato preserves another comparable formula in *On Agriculture*, where he suggests that for a dislocated or fractured bone you should cleave a reed in two and then re-join them while holding an iron knife and uttering the incantation: *motas vaeta daries dardares astataries dissunapiter*. On the following day, one should recite *haut haut haut istasis tarsis ardannabou dannaustra*.[72] Rather than percussive gutturals, this formula repeats the "dar" syllable and employs a rhyme scheme. Likewise, the *Greek Magical Papyri*, a cache of spells, incantations and amuletic texts found in

Egypt and probably composed from the second century BCE to the fourth century CE, display many similar features. Foreign words from Persian, Egyptian and Hebrew appear in garbled forms throughout, but many so-called abracadabra formulations started out as meaningful Greek phrases, and underwent revision into unintelligible *voces magicae*, thereby illustrating how the tradition values foreign words and sounds more than syntax and sense.[73]

Many of these texts contain the same type of repeated consonant clusters discussed above, but magical practitioners of these centuries display an astonishing amount of verbal and sonic play, working with palindromes, disappearing words and Greek vowel intonation. For example, many spells use the "vanishing name" technique, where a disease (or an unwanted demon) is written in "grape cluster" formation, with a letter disappearing from each side of the word in each iteration until the illness or afflicting spirit symbolically dissipates. "Abracadabra" forms one such (rough) palindrome (see Quintus Serenus, *Liber Medicinalis* 54.1–9, ll. 935–40), whereas the most common vanishing name on fever amulets is ABLANATHANALBA.[74] Variations abound, but this technique often treats fever, bleeding, headaches and sore throats, in so far as these conditions can be symbolically removed by the successive disappearance of a letter.[75] In all these cases, the text's power does not reside in its intelligible meaning, since these palindromes do not always possess obvious linguistic significance (aside from representing demonic names). Instead, their efficacy stems from the mysterious syllables of the words themselves, as they are redoubled and erased in turn.[76] Of course, not all spells include these sonic and typographic techniques, and many spells involve prayers, requests and repeated commands to heal. Nevertheless, the magical world thrives on sonic mystery and play, with the power of the sung and spoken words audible in the strangeness of the formulations.

Innovative techniques certainly flourished in moments of intense cultural interaction, such as in the Hellenistic and Roman Imperial eras, but, as Faraone and Obbink suggest, much of the evidence points to the late fifth century BCE as a period of transition, "not only from verbal song to written verse, and from simple healing paeans in hexameters to more complex lyric songs, but also from verse to abracadabra, from narrative to *historiolae*, and which saw, perhaps, the invention of the first handbook of magical spells".[77] The Orphic mystery cult and *Getty Hexameters* thus shows a glimmer of these sonic therapeutics as they were developing in the fifth century BCE.

The sonics of Hippocratic medicine

We can now return to *On the Sacred Disease* in order to situate the author's

attacks on songs and purifications within the developing and varied sonic landscape laid out in the last few sections. In so doing, we should understand that the author is joining many other physicians who self-consciously sought to define their *technē* against their competitors in the medical marketplace.[78] His text thus criticizes the use of incantations presumably because he believes that they do not work, but also because they neatly antagonize the logic of Hippocratic medicine, operating outside a series of bodily causes within a broader theory of divine/human interaction. Yet at the same time, this purely rationalist interpretation runs into trouble, since the author of this text elsewhere leaves the door open to prayer, arguing "It would have been better if [the charlatans] had done the opposite and taken the sick into the temples, there, by sacrifice and prayer, to make supplication to the gods; instead they simply purify them and do none of these things".[79] It therefore cannot be unequivocally stated that this author rejected the role of song in all cures; rather, he supports the right type of song, employed in properly sanctioned ways and used with certain, limited expectations in mind.[80] To be sure, neither *On the Sacred Disease*, nor other texts in the corpus attack public paeans or healing cults, which suggests that *polis*-sanctioned sonic practices formed less of a threat. We should therefore understand his critiques against incantations as part of an attempt to establish new Hippocratic doctrinal and therapeutic programmes while also instituting a novel brand of sonic care.

First, we should not lose sight of the fact that *On the Sacred Disease* – like many other Hippocratic texts – would have been delivered orally as a set piece. Performances presumably would have been delivered in the *agora* (or some other public place) in an attempt to denigrate competitors and win potential clients. Another Hippocratic treatise, *The Art*, was surely written to be an oral performance, since the author explicitly refers to it as a "demonstration" (*apodeixis*).[81] Similarly, *Breaths* 14 (= 6.110, ed. Littré) refers to his audience as "listeners" (*akountes*), whereas *Precepts* 12–13 (= 9.266–8, ed. Littré) gives instructions for such public lectures, suggesting that physicians should avoid flowery language and poetic quotations, which are used only to attract a crowd who are not yet sick. Ultimately, however, the author of *Precepts* believes that these public displays should be avoided. Likewise, *Decorum* 2 (= 9.228, ed. Littré), too, levels an attack on those who deceive their audiences with such vulgarity (*banausiē*) and who wear conspicuous attire to do so. Although the attitude to this mode of medicine is not uniform across the corpus, the attention given to public performances suggests that they must have been quite common.

Of course, one could easily argue that it is the linguistic content of these words and speeches that influences patient outcomes, not the sounds themselves. Yet the Hippocratic insistence on the calm, sober *manner* in which

doctors speak betrays an interest in audible markers of their brand. In avoiding "flowery language" they try to enforce a particular brand of speech so that these preparatory lectures would all audibly reinforce the staid and sober persona of the ideal physician. For example, *Decorum* talks about the physician projecting calm, authority and self-control, especially through judicious and brief speech (see esp. 3, 5, 7 and 12). In so far as physicians reject linguistic and sonic embellishment, their words convey a consistent and self-conscious acoustic practice. Moreover, it is not the case that these speeches would have merely enticed prospective patients into treatment, convincing crowds of soon-to-be-ill onlookers of the physician's expertise. Publicly pronounced prescriptions and aetiologies also prime patients to think about their bodies in certain ways and not others. Just as the prefatory paeans and inscribed attestations of the Asklepieia would have provided a model through which suppliants could understand their corporeal experiences as part of a broader collective, the public lectures of the Hippocratics supply an audible heuristic for patients to interpret their individual sensations, with the doctor as the sole audible authority. The physician alone vocalizes information and projects his expertise (although in competition with other physicians and healing practitioners). In this way, public speeches shape the reactions and responses to both the physician and his treatments, thereby heightening the perceived efficacy of any subsequent therapy. As such, just as we cannot extract the inscribed *iamata* and prefatory paeans from understanding the potential effectiveness of the healing cult at Epidaurus, we cannot wholly separate out public lectures from the Hippocratic medical intervention.

Viewed in this light, the acoustics of Hippocratic practice help recognize how diffuse the moment is when the medical experience begins. It may well be that physicians at this time did not employ incantations, but that does not mean that the specific sonic atmospheres that they created should not be considered part of their broader therapeutic programmes. The author of *Affections* makes just such a point:

> In medicine we begin sometimes with talking, and other times with acting, and we end [treatment] in a similar way; and when we begin with talking we do not always start with the same words, not even if we are talking about the same things, nor do we end in the same words.
>
> (*Diseases* 1.9 = 6.156, ed. Littré)

Indeed, these types of advice and encouragement could be employed as part of a broader treatment. For example, *Precepts* 9 (= 9.264–6, ed. Littré) describes the power of words, arguing that a good physician will exhort his patient and tell him not to worry, since "if he makes a demonstration of the discoveries of the art, preserving and not distorting nature, he will immediately remove the

attendant depression or distrust". Similarly, *Decorum* 16 (= 9.242, ed. Littré) advises that physicians, "recommend what is necessary cheerfully and calmly, and turning towards other things, sometimes rebuke him sharply and strictly, other times encourage with attention and care". In short, words can have medical power. Even if this type of encouragement seems closer aligned with our modern notions of what belongs to doctor/patient interactions, these words produce benefits in ways not entirely dissimilar from magical names and mystical incantations: they cultivate expertise and create trust.

Not all medical interactions began with public performances or words of support, and for many of the "prognostic" texts in the Hippocratic corpus (which includes *Prognostics*, *Prorrhetics* 1 and 2, *Coan Prenotions*, *Dentition*, *Aphorisms*, *Airs Waters Places*, and *Epidemics* 1–7), the physician's engagement with the patient did not consist solely (or even primarily) of this type of encouragement. In general, Hippocratic physicians were more concerned with predicting the course of a disease rather than diagnosing it, and as part of such forecasting, they diminished patient reports and advocated winning trust by recounting a patient's experiences *before* being told. In this way, the physician accumulates authority in so far as he can "say what has happened, discern what is happening and predict what will happen", even without being specifically informed (*Epidemics* 1.11 = 2.634, ed. Littré). This procedure runs uncomfortably close to oracular prediction, which was used by the very groups from which the author of *On the Sacred Disease* attempts to distance himself.[82] This makes any audible differentiation between groups all the more valuable.

The author of *Prorrhetics* 2 even rejects over-precise medical predictions as "prophecy" (*mantikē*), and to separate his own practice out, he roots his forecasts in corporeal "signs" (*sēmeia*) that will help predict who will recover and who will die (*Prorrhetics* 2.2.1 = 9.8, ed. Littré). This and other prognostic texts privilege visual signs, using them as visible indicators of a disease's trajectory, but they also track a whole host of auditory indicators, such as "clearness or hoarseness of the voice, speed or slowness of respiration" as well as other discharges (*Art* 13 = 6.24, ed. Littré). The author of *Prorrhetics* 2 describes which signs can be used to make responsible predictions, claiming that you can look at the patient (sight), palpate him (touch) and smell him, and that "by listening with your ears to his voice and breathing, it is possible to recognize things that are clearly not the same as in robust individuals" (*Prorrhetics* 2.3 = 9.12, ed. Littré). Examples abound throughout the corpus, as authors note hoarseness, deepening or shrill voice, whistling throats, rumbling bellies, internal gurgling, flatulence and clicking jaws. These sonic signs certainly remain comprehensible to our modern ears, and we know well the syrups and lozenges prescribed for scratchy voices and thick coughs. Yet

several other disease-sounds seem less familiar, and throughout the prognostic texts in particular, authors spend a great deal of effort cataloguing what could be called "voice pathologies", including the frequent concern with rambling, silence and "broken" voices.

Voice pathologies abound in the corpus and form the vast majority of the sounds catalogued by physicians. The author of *Epidemics* 6 explicitly advises tracking them as part of a wider set of medically significant signs:

> Things from the small tablet that ought to be observed: regimen resides in repletion and evacuation of food and drinks; changes in these things – from what to what, and what happens. Smells: pleasant, painful and filling; changes from what things and what happens. The stuff going in or breath going in, or bodily things as well. *Noises: stronger, but some painful. And of the tongue, what is called forth from what… . Words, silence, saying what he wants; words: which ones he says, either loudly, or many, or accurate or affected.*[83]

As I have argued elsewhere, treating the patient's voice as a locus of aberrant signs hinders reciprocal communication, and brings all utterances into close conceptual contact with other bodily *excreta*.[84] Moreover, it establishes the active sonic chamber to be the body, rather than any temple space like the *abaton*, and transforms the crucial acoustic exchange into deriving sounds *from* the body rather than directing sounds *at* it. That is, the sonics of Hippocratic medicine make the interior of the body the crucial space of illness, rather than any broader religious or civic frame.[85] Yet prognostic practices do not exhaust the use of sound in this context, especially when the type of space that needs to be created for proper prognosis would have been more or less silent, and this itself could supply certain therapeutic effects.

Although physicians could establish their own surgery, the Hippocratic corpus almost exclusively mentions treating patients either in their own homes, or in the homes of their friends.[86] The Hippocratic text *Decorum* describes what such sickrooms could look like, and presents several options:

> One ought to consider the factors surrounding the [sick] beds, both those which concern their season and those which concern their kinds. Some [rest] in breezy places, others underground, and others in enclosed rooms. One should consider both sounds and smells, especially wine, since this is the worst.[87]

Whereas the concern with "sounds" does not demand as much attention as the concern with smells, the prognostic texts construct sickrooms as idealized blank spaces in which an attendant catalogues the relevant signs, both visual and auditory.[88] *Decorum* paints just such a picture, with an assistant sitting silently alongside the patient to document the disease's trajectory:

> Let one of your students remain as an attendant so that he can perform your instructions without discomfort and administer the arranged treatment … and so that nothing will

escape his attention in the intervals (between your visits).[89]

Indeed, the *Epidemics* seem to track signs almost constantly throughout the course of an illness, with special attention given to the "critical days". The effect is to turn the sickroom (at least at a textual level) into a blank space, a constructed state of homogeneity from which to pluck any aberrant signs. The space of healing is thus silent but for the shouts and murmurs of the body.

In so far as the place of convalescence reinforces the epistemological model espoused by the Hippocratics, the sonics of the sickroom could have played just as important a role in a patient's perceived recovery as did a magical incantation directed at a bleeding wound or the religious silence of the *abaton*. Moreover, silent sickrooms are not ahistorical healing spaces (especially given the prevalent use of song discussed above) but culturally embedded practices just like any other. Indeed, foreign-sounding phonemes perform expertise, alleviate anxiety and potentially produce positive health outcomes. The quiet space of recovery does much the same by establishing the physician in a position of authority, able to ask directed questions, with the patient as an object of study. The seemingly ever-present assistant would have only further ensured that the silence felt coextensive with being observed. The sonic signature of this healing practice thus reinforces the power dynamic that the physician is already trying to construct, with his silent, staid authority audible in the air. In this way, the hypothetical healing space of the prognostic texts mirrors the Hippocratic epistemological relationship to the body. What is more, the sounds echoing within this space audibly reinforce the assumption that diseases are internal and hidden, emitting periodic signals to be discerned by only an expert.[90]

Conclusion

The soundscape of healing in the early fifth century BCE contained multiple voices, but all ancient healing groups subjected sick people to specific sonic regimens. Acknowledging the power of sounds to organize spaces and structure the process of healing helps cast even the Hippocratic, "rationalist" rejection of incantation in a new light, ensuring that the text is not seen as a dismissal of a sound's place in medicine *tout court*, but as a moment in which physicians sought to distinguish their own brands of sonic care as part of a broader rationalistic programme. Whether using specific performance practices to engender community, particular linguistic practices to construct expertise, or certain acoustic explanations to frame sensations, healers of various types deployed and employed sounds as a part of their intervention into disease. In each of these instances, the audible aspects of therapy constructed and

controlled spaces of treatment. At the same time, these sounds often make an aetiology of disease directly perceptible to the ears, so that the soundtrack of each healing type lets patients hear an argument about the nature, causes and boundaries of illness. The examples discussed above are only a small sample of how sounds would ring through places of healing, but by tracking the sonic markers of medicine, we gain insight into the dynamics of these experiences and what it would have felt like to be sick in antiquity.

1 For an exploration of the complementary use of smell in Greek medicine, see Totelin (2014) in this series.

2 All translations are my own unless otherwise noted.

3 For a strong version of this claim, see West (2000).

4 *Ebers Papyrus* 19, 30, 57–8 (ed. Ebbell). The papyrus also starts with spells to be uttered over a remedy, but these may not have been sung; see *Ebers Papyrus* 1–2 (ed. Ebbell). See also *London Medical Papyrus*, esp. no. 32–3 (ed. Wreszinski), which contains medical incantations; cf. Arnott (1996); Ritner (2000). Interestingly, the medical spells 27, 28, 30 and 33 in the *London Medical Papyrus* seem Semitic in origin (Steiner 1992), a fact that aligns with the innate "foreignness" of incantations in later Greek contexts (see below).

5 Pritchard (1969: 100–1).

6 *Pythian Ode* 3.51–3. Pindar's tale references how Zeus punished Asclepius for bringing back the dead for money. This corresponds to several passages where Aeschylus refers to the power of song to bring back mortals from death (*Eumenides* 647–51; *Agamemnon* 1019–24).

7 Plato, *Republic* 4.426a8–b2. In this period, the boundary between medicine and magic was somewhat fluid (although vigorously defended), and many concepts and practices moved between the two groups; see Lloyd (1979: 9–58) for a seminal discussion.

8 Even in those instances where medicine involves music at this time, the practitioners are not Hippocratic. For example, Socrates mentions a Thracian headache amulet that is not efficacious without uttering a charm at the moment of application (Plato, *Charmides* 155e1–157c4), whereas *Theaetetus* 149c8–d4 mentions midwives who can bring on labour through drugs and incantations (*epaidousai*).

9 None of the earliest five sources about Pythagoreanism mention mathematics or harmony. Metempsychosis stands closer to the cult's distinguishing feature; see Xenophanes fr. 7 (ed. Diels-Kranz); Heraclitus, fr. 40, 126b (ed. Diels-Kranz); Herodotus 2.81, 2.123, 4.94–6; Ion of Chios, cited by Diogenes Laertius, *Life of Pherecydes* 1.119–29; *Life of Pythagoras* 8.8.

10 Philolaus, fr. 1., 6, 6a (ed. Huffman); cf. Plato, *Philebus* 23c1–26c2; cf. Barker (1989), (2007) for the development of harmonic theory.

11 Philolaus, fr. A27, A28 (ed. Huffman); cf. Lloyd (1963).

12 Aristoxenus fr. 30 (ed. Wehrli); cf. West (2000: 57). Xenocrates of Tarentum also reportedly calmed panic-stricken people with music; see Martianus Capella 9.926.

13 See West (1992: 246–7).

14 Iamblichus in the late third century CE describes specific Pythagorean musical therapeutics, reporting how Pythagoras held that "music greatly contributed to health, if used in the appropriate manner. For he was accustomed to use such a thing as a purification, and not as

a mere accessory" (Iamblichus, *On the Life of Pythagoras* 25.111). Similarly, Porphyry reports that Pythagoras soothed the afflictions of both the body and soul with rhythm, melody and enchantments, since he "heard the harmony of the whole cosmos and understood the entire harmony of the spheres and the celestial bodies moving along them" (Porphyry, *Life of Pythagoras* 30). These notions are probably applied retroactively to early Pythagoreanism. See Huffman (2014) for a history of Pythagoreanism and bibliography about the scholarly disputes surrounding the sect.

15 That said, "concordance" (*sumphōnia*) does make a brief appearance in the Heraclitean-style aphorisms of *Nutriment*, but only in the pithy phrase "the concordant is discordant; discordant is concordant" (*Nutriment* 40 = 9.112 Littré; cf. 48 = 9.116 Littré; Heraclitus, fr. 54 Diels-Kranz).

16 Empedocles, fr. 111 Diels-Kranz. Empedocles even went so far as to profess the ability to draw back the dead from Hades, just as Asclepius does according to Pindar; see n. 6 above.

17 Cf. Diogenes Laertius, *Life of Pythagoras* 8.19; Porphyry, *Life of Pythagoras* 45; Iamblichus, *Protrepticus* 21, 24.

18 Similar characterizations occur in Plato's *Phaedrus*, where Socrates describes diseases caused by "ancient guilt" that are cured by prophecy, oracles, prayers, purifications and sacred rites (*Phaedrus* 244d5–245a1; cf. *Laws* 10.885b8–9; 10.905d1–907b4).

19 *Derveni Papyrus*, Col. 6 (ed. Betegh); cf. Plato, *Meno* 81a10–c9. For the overlap between Orphism and Pythagoreanism, see Betegh (2014).

20 Burkert (1985: 267); cf. Rutherford (1993: 87); Faraone (2013b: 109) and n. 21 below.

21 *Paiēōn* is first found mentioned on Linear B tablets from Knossos under the moniker *paiawon*. At this early stage, the god was associated specifically with battlefield healing, as well as male-chanted victory cries; see Rutherford (2001: 14–15) and Furley and Bremer (2001 vol. 1: 209). *Paiēōn*'s instantiation in the *Iliad* seems to reflect this association, in so far as he applies "pain-slaying" topical drugs to the wounds of Hades and Ares, after raging Diomedes has injured them (*Iliad* 5.396–403; 5.899–904). In the *Odyssey*, the healing powers of *Paiēōn* extend beyond the battlefield, as Helen places a "pain-banishing" drug into the wine cups of her guests, a drug which she has learned from Polydamna in Egypt, a land "where every person is a physician, wise beyond all men, for they are the family of *Paiēōn*" (*Odyssey* 4.231–2). See also Hesiod, fr. 307 (eds. Merkelbach and West), and Solon, *Iambi et elegi Graeci* 13.57; both passages associate *pharmaka* with *Paiēōn*; cf. Nicander, *Theriaca* 439, 686.

22 For this association, see *Homeric Hymn to Apollo* 518; Aeschylus, *Agamemnon* 512; cf. Rutherford (2001: 10–17); Bremmer (2013: 23).

23 Cf. Aeschylus, *Agamemnon* 1199; *Persians* 605; *Suppliants* 1066; Sophocles, *Philoctetes* 168.

24 Sophocles, fr. 710 (*Phineus*, ed. Radt) = Aristophanes, *Wealth* 636; see Rutherford (2001: 11, n. 3). The epithet also gets applied to Zeus, Dionysus and Heracles.

25 Homer, *Iliad* 1.473–4. It is grammatically ambiguous in this sentence whether *paiēōn* acts as an internal accusative (e.g. "singing *a* paean") and thus refers to a song, or whether it functions as an epithet syntactically parallel to "far-shooter" (e.g. "singing beautiful *Paiēōn*"), and thereby referring to a deity. This illustrates the proximity and potential identity of the god and the healing hymn.

26 Sophocles, *Oedipus Tyrannus* 4–5. Moreover, the first chorus (*Oedipus Tyrannus* 151–215) enacts a pseudo-paean to Delian Apollo and Athena in the hopes of bringing the city's

suffering to an end.

27 Plutarch (attributed), *On Music* 42; cf. Athenaeus, *The Learned Banqueters* 15.22; Martianus Capella 9.926; see also Rutherford (2001: 36–8). Clement, *Stromata* 5.8.48.4–6 also mentions that a certain Branchos intoned a series of semi-sensical words in response to a plague; this, however, functions somewhat differently than a paean (see n. 71 below).

28 *Scholia on* Aristophanes' *Acharnians* 243a. Mitchell-Boyask (2008) argues that music, drama and healing were wedded together in the Athenian consciousness in particular after the founding of the Asclepieion behind the theatre of Dionysus in Athens after the plague of 420 BCE.

29 Aristoxenus fr. 117 (ed. Wehrli) = Apollonius, *Mirabilia* 40; cf. West (1990). Similarly, Iamblichus, *Life of Pythagoras* 25.110 describes Pythagoras using paeans to calm a youth driven mad by love.

30 *Scholia on the* Grammatical Art *of Dionysius Thrax* 451.12–13 (ed. Hilgard).

31 Cf. *Iliad* 1.48–52; Sophocles, *Oedipus Tyrannus* 25–8; Thucydides 2.48–54.

32 Cf. Mitchell-Boyask (2008: 39–44, 122–52) for a discussion of the connection and overlap between disease and civil strife as they are presented in Greek tragedy.

33 On the one hand, in so far as *Paiēōn* tends to the wounds of both Hades and Ares by acting as a human physician would, he embodies the type of medical practice that included using song to heal an individual. On the other hand, he personifies the prayers and paeans that humans send up to the gods in order to propitiate them, including in times of plague. In this moment *Paiēōn* thereby forms a bridge between the human and divine realms of healing, operating as a signifier of both how ancient physicians used songs to treat individual suffering and how groups responded to plagues with collective song.

34 See Furley and Bremer (2001, 1: 211–14).

35 6.1 *Paean to Asklepios*, I Erythrai 205 (trans. Furley and Bremer).

36 Cf. Sophocles, *Oedipus Tyrannus* 2–4, discussed above.

37 This also coheres with the apotropaic use of the genre to ward off civil strife (see above).

38 Cf. Rutherford (2001: 21).

39 The specific sonics of any paean would depend on the physical space in which it is sung – whether echoing within the walls of a temple precinct, scattered into the open air or confined within a sympotic gathering – and as a consequence, we should not completely standardize the effects such songs would have produced. That said, the fluidity between performers and audience mirrors the openness of the sonic fabric created by the hymn, and it is precisely this effect that would have been transferable to multiple locations.

40 As Rutherford (2001: 3) states, song often functioned as "symbolic social action through which members of a community enacted (and not merely expressed) key events and transitions".

41 The succession of gods in Asclepius' family also enacts a (rough) trajectory of recovery. The hymn starts with Apollo Healer, whose status as a "long-range archer" also invokes his plague-producing powers (and thus the beginning of a disease-episode). The paean then moves through Asclepius, Cutter, Lily-footed, "I Heal", lovely Light, Cure-all, Soothing and Health, thereby passing from more violent surgical interventions to the softer therapies, which finally give way to Health.

42 See Furley and Bremer (2001, 1: 213).

43 At Epidaurus, it is unclear whether suppliants would have entered the Temple of Apollo and Asclepius themselves to make sacrifice or not.

44 Perrot (2015) details much of the evidence for the sounds that occurred in Asclepieia and his analysis incorporates the notion of a "soundscape". Nevertheless, he incorporates any mention of sounds into the evidence describing the cultic experience, even incidental, seemingly accidental noises, and therefore his claims become a little diffuse and generic.

45 Epigraphical evidence suggests that this particular inscription dates to the third or fourth century CE, but other inscriptions dedicated to the Mother of the Gods date as far back as the fifth or fourth century BCE, which suggests that this hymn could have a much older provenance, only to be re-inscribed later, just as the Erythraian hymn; see Furley and Bremer (2001, 1: 214–16).

46 The Cassel-Stone, found in Athens, also has four paeans inscribed on it, including *Ariphron's Paean to Hygeia*; cf. *Inscriptiones Graecae* II^2 4533 (ed. Kirchner).

47 Mitsos (1980); cf. West (1986); Bonefas (1989); Perrot (2015: 221–2).

48 *Inscriptiones Graecae* IV^2 1.132 (ed. Hiller von Gaertringen). Ariphron's paean appeared many places outside the Asclepieion at Epidaurus. For instance, Socrates mentions the hymn as a sympotic song (*Gorgias* 451e1–4), whereas Lucian refers to it as "most well-known and in the mouths of all" (*A Slip of the Tongue in Greeting* 6).

49 Lucian (attributed), *In Praise of Demosthenes* 27; Philostratus the Younger, *Imagines*, 13; cf. Philostratus, *Life of Apollonius of Tyana* 3.17. See Furley and Bremer (2001, 1: 261–2).

50 There are considerable doubts as to whether Sophocles actually hosted a shrine of Asclepius when the god was first introduced to Athens and whether he was subsequently hailed as a hero, "Receiver" (*Dexion*). The notion can be attributed to posthumous attempts to assign him a greater role in an increasingly popular cult; cf. Aleshire (1989: 9–11); Connolly (1998). Nevertheless, that he participated in the founding of the Asclepieion is still plausible; cf. Mitchel-Boyask (2008: 112–13).

51 Even if Sophocles himself did not write the paean – although this seems quite plausible – the hymn appears quite early. Indeed, the incorporation of music into temple rituals continued to at least the beginning of the third century CE, since Aelius Aristides also provides many references to music as part of Asclepian therapy in his *Sacred Tales*, including boys singing songs in the temple (1.47.30), getting his friends to sing a paean after leaving the baths and composing a paean himself (2.48.53; 4.50.31; cf. 1.47.73).

52 See Furley and Bremer (2001, 1: 212, n. 16).

53 For a discussion of the hymn text and the instructions surrounding it, see Furley and Bremer (2001, 1: 227–40).

54 See LiDonnici (1995) for a text, translation and commentary on these "Miracle Inscriptions".

55 The Asclepieia were not the only cults that used incubatory practices involving silence; for a survey, see von Ehrenheim (2015).

56 Heraclides of Pontus asserts that the trimeter was invented when Apollo repeated *iē paian* three times while offering a libation; see fr. 158 (ed. Wehrli) = Athenaeus, *The Learned Banqueters* 15.62.701e; cf. Aristophanes, *Women at the Thesmophoria* 311, where the *paian*-cry is repeated. Norden (1939: 242–4) writes on this triple structure; cf. Rutherford (2001: 19).

57 I am calling these "Orphic", although the boundaries of Orphism are heavily contested; see Edmonds (2013: 71–88).

58 *D1 Pelinna* (Edmonds 2011b: 36–7 = *Orphic Fragments* 485, ed. Bernabé, trans. Edmonds). Cf. Edmonds 2011a: 8–9.

59 *D3 Pherai* (Edmonds 2011b: 37 = *Orphic Fragments* 493, ed. Bernabé); cf. Edmonds 2011a: 9. See also *A4 Thurii* (Edmonds 2011b: 20 = *Orphic Fragments* 487, ed. Bernabé).

60 *Orphic Fragments* 463–5 (ed. Bernabé) = *Grecques dialectales d'Olbia* 94a–c. See West (1982b) for images; cf. Edmonds (2013: 198–200).

61 *Getty Hexameters*, Side A, column I, ll. 6, 23, 49. The term *pharmaka* can refer to songs, drugs, poisons or amulets, and its use on a physical, written tablet talking about performed songs highlights the polyvalence of the term.

62 See Faraone (2013b) for the latter interpretation.

63 The sack of Selinus provides a *terminus ante quem*, dating the text to the period of 420–409 BCE; cf. Jordan and Kotansky (2011: 54); Bremmer (2013); Janko (2013: 32–3, 37). The mention of Persephone, Demeter and Hecate suggest that the poem may have been used as part of the Eleusinian mysteries, but this is contested.

64 *Getty Hexameters*, Side A, Column i, ll. 1–5. That being said, the text later asks the god to ward off evils that affect the civic collective, which may indicate that the hexameters were performed by a chorus before being immured; see esp. *Getty Hexameters*, Side A, Column ii, ll. 23–8.

65 For arguments concerning the purpose of the hexameters, see Janko (2013: 37); Faraone (2013a, 2013b).

66 *Getty Hexameters*, Side A, Column ii, ll. 32–6, trans. Faraone

67 Bernabé (2013) collects all the ancient references to and instances of this incantation.

68 Bernabé (2013: 93).

69 Bernabé (2013: 87, 95).

70 Bernabé (2013: 75–7). For instance, see Clement, *Stromata* 5.8.45.2, which recounts Androcydes the Pythagorean's explanation of this text; see also the explanations accompanying the account in Hesychius mentioned above.

71 Clement, *Stromata* 5.8.48.4–6. Branchos was the legendary founder of a cult to Apollo at Didyma, which was established prior to the arrival of Ionian Greeks and subsequently run by the Branchidae. Little information about Branchos comes from before the Hellenistic period (Callimachus wrote a poem named after him), which may suggest that the above formulation anachronistically imagines what a purification would sound like based on Hellenistic models; cf. Parke (1985: 2–5).

72 Cato, *On Agriculture* 160. Although this text is written around 160 BCE, it probably reflects an older tradition, and indeed, it contains a triple repetition of consonants (*daries dardares*) and words (*haut haut haut*) along with rhyming and jingling sounds marking it sonically as efficacious, while still sounding slightly more Latinate.

73 Faraone (2012: 35–49).

74 For example, see *Greek Magical Papyri* XXXIII.1–25. See Faraone (2012) for an extended treatment of these amulets, their historical emergence and their evolution.

75 Although these amulets certainly function as written documents, they pose danger in this format, since the unwanted name can sometimes recreate itself along the diagonal edges. Practitioners developed techniques to prevent the demons and illness from retaining power through this textual trace, but it suggests the practice emerged as an oral performance and subsequently made the leap to a typographic technique; cf. Bernard (1991: 325); Gordon (2002: 86); Faraone (2012).

76 Other spells of this era likewise leverage sonic effects by intoning strings of the seven Greek vowels (which can either "vanish" or be uttered for their innate power alone). A healing amulet displaying the religious synchretism of the late Imperial period includes three of the sonic markers that we have discussed, first invoking the name of Christ and the lord God of gods, as well as including magical symbols, then uttering the call "A///EE ĒĒĒ IIII OOOOO YYYYYY ŌŌŌŌŌŌŌ ALBLANATHAMALA" before ending "Heal Thaes, immediately, immediately; quickly, quickly" (*Greek Magical Papyri* C.1–7); cf. Faraone (2012: 32).

77 Faraone and Obbink (2013: 9). These same sonic markers of magical efficacy may be precisely what Gorgias exploits at just this time in his oratorical pieces, which frequently employ jingling iteration of consonants and rhyming repetitions. Indeed, he himself compares rhetoric to incantation and magic in his *Encomium of Helen* while using just such sonic signifiers: "Inspired incantations inject pleasure, and eject pain through words" (*hai gar entheoi dia logōn epōidai epagōgoi hēdonēs, apagōgoi lupēs ginontai; Encomium of Helen* 10); cf. de Romilly (1975).

78 For an overview of ancient medicine and the Hippocratics' role in it, see Nutton (2004); cf. Totelin (2014) in this series.

79 *On the Sacred Disease* 4 (= 6.362, ed. Littré). Other Hippocratic texts incorporate the divine more explicitly, including *Decorum* 6 (= 9.234–6, ed. Littré), which pulls together medicine and traditional religiosity, claiming that knowledge of the gods is woven into medicine.

80 See n. 7 above about the overlap and interpenetration of magic and medicine.

81 Hippocrates, *The Art* 3 (= 6.4, ed. Littré). *The Art*'s antagonistic tone and Gorgias-like rhetorical distinction between the assonant *technē* and *tuchē* (art and luck) also potentially evince its performative nature; see esp. *The Art* 4 (= 6.6, ed. Littré).

82 Cf. Homer, *Iliad* 1.69–70, where the prophet Calchas is described as knowing "what is, what will be, and what has been before".

83 Hippocrates, *Epidemics* 6.8.7 (= 5.344–6, ed. Littré), emphasis added. Similarly, *Humours* 2 (= 5.478, ed. Littré) recommends attending to certain sounds, including "voice and silence"; cf. *Humours* 4, 5, 9.

84 Webster (2016).

85 See Holmes (2010), who discusses the emergence of the physical body and its "cavity" as the locus of both self-care and ethical subjectivity, and tracks how these interior corporeal spaces fit within broader paradigms of causality.

86 For example, the case studies in *Epidemics* 1 frequently note the location of convalescence, including "Philiscus, who lived by the Wall", "The wife of Epicrates, who was lodged at the house of Archigetes" and "Cleonactides, who was lodged above the Temple of Hercules". *Decorum* 11(= 9.238, ed. Littré) also mentions visiting a sick person.

87 *Decorum* 15 (= 9.240, ed. Littré).

88 For instance, see *Prorrhetics* 2.3 (= 9.10–2, ed. Littré).

89 *Decorum* 17 (= 9.242, ed. Littré).

90 That being said, the sickroom's quiet does not appear to have been rigorously enforced, and physicians prescribe regimens that occasionally require patients go outside for exercise (see esp. *Regimen* for such prescriptions). Therefore, literal or complete silence was not uniformly maintained, but the techniques of prognosis do demand a sonic atmosphere that relies on quiet.

8
Lucretius on sound[1]

Pamela Zinn

If a tree falls in the woods and no one is around to hear it, does it make a sound? The age-old question is a useful vector into the workings of the senses in the Epicurean school of thought. Lucretius' epic, *De rerum natura* (*On the Nature of Things*, hereafter *DRN*), contains the most detailed and complete account of Epicurean sound; as we shall see, it also applies its own principles concerning sound in order to further its didactic aims.

The importance of the senses in Epicurean thought cannot be overstated. They have often been studied as the alpha and omega of its empirical epistemology, a touchstone underlying various aspects of its linguistic theory as well as many of the more overtly literary features of Lucretius' *DRN*, and, more debatably, the basis of the Epicurean ethical system. Considerably less attention has been paid to the mechanisms by which the senses – particularly those other than sight and thought – operate.

This chapter takes a ground-up approach to sound in *DRN*, reconstructing Lucretius' account of the physiological mechanisms underlying the production and perception of sounds. This reconstruction challenges some views common in Epicurean scholarship, beginning with the tendency to regard the perception of sound (i.e. hearing) as passive, and shows that Lucretius' materialist theory of sound is focused on process as much as result. (It thus complements Stephen Kidd's reconstruction, in chapter 5 of this volume, of Aristotle's similarly complex theory of sound and hearing.) This chapter advances a new interpretation of the relationship between *sonus* (generally "sound") and *vox* (generally "voice") in Lucretius, reconsiders *DRN*'s account of the origins of language with a view to which species have the potential for producing certain sounds, and suggests some implications of this analysis for Lucretius'

representation of *DRN* as sound, including how Lucretius' theories about the production and perception of sound function in relation to the poem's didactic programme.

Sound production and perception

Lucretius' treatment of sound is primarily concerned with sound production and sound perception, as properties of living creatures. Lucretius regards every living creature as an entirely material and mortal entity. The life-force in each is a structure that I call the *animus–anima* complex; we often translate these two Latin words as "mind" and "spirit", but there is no suitable translation for their combined meaning in Lucretius, where they designate something comparable to a central nervous system, centred in the heart, rather than the head. The *animus* or *mens* (also generally translated "mind") is the portion of the *animus–anima* complex concentrated in the heart; this concentration is the functional equivalent of what we today might call the brain, mind and seat of consciousness. The *anima* is the rest of the complex and lies dispersed throughout the rest of the body; this is the functional equivalent of the rest of the nervous system. This complex, the rest of the living body and a network of emergent faculties make up a generally stable system. Those faculties include *sensus*. For Lucretius, *sensus* encompasses and refers to a number of related things – including, as Glidden notes, *aisthēsis*, *pathē* and *aisthētēria*.[2] *Sensus* can thus refer to feeling or perception in general. At other times, it signifies specific instances of feeling, experienced through what we might call "sense organs". It also can refer collectively to the sense organs themselves and to their specific faculties. In this way, *sensus* includes thought, emotion, pleasure, pain and – most importantly for us – the traditional "five senses".

According to Lucretius, the traditional five senses – touch, taste, smell, hearing and sight – are shared by all living creatures; he calls these the "senses of the body" or *sensus corporis*. They are particular to sense organs, which are structures of the bodily frame. Hearing is specific to the ears. Like sight and smell, hearing operates by means of indirect contact with the objects of its perception. The ears interact with intermediary stimuli generated by the source-object. The intermediaries are microscopic, material bodies. These bodies are like molecules; they are assemblages (*concilia*) of different atoms, or what Lucretius calls first-beginnings (*primordia* vel sim.).[3] Lucretius has no distinct term for the *concilia* that are involved in hearing; for the sake of convenience I will refer to them as hearing-causing bodies. He believes that the perception of sounds occurs when these intermediary hearing-causing bodies, which are distinct from their source-object, interact with the inner

structures of the ears.[4] Hearing-causing bodies are emitted from both living and non-living macroscopic *concilia* under particular circumstances,[5] and their materiality is crucial to Lucretius' account of the nature of sound.

Lucretius distinguishes two sorts of hearing-causing bodies: *vox* and *sonus*.[6] The emission of *vox* requires a gathering of first-beginnings of *voces* (*primordia vocum*, 4.531). This gathering occurs deep within living source-objects. The assemblages well up and proceed through various passages, seemingly as a stream of *voces*. They then advance through the narrow passage of the throat, sometimes scraping it in the process.[7] Finally, they are given further shape by a creature's tongue and lips just prior to their release:

> Hasce igitur penitus voces cum corpore nostro
> exprimimus rectoque foras emittimus ore,
> mobilis articulat verborum daedala lingua
> formaturaque labrorum pro parte figurat.

> Therefore when we form these *voces* deep in our body and emit them straight out from the mouth, the swift tongue, inventive of words, articulates them and the shaping activity of the lips for its part pronounces them.

(*DRN* 4.549–52)[8]

Exprimimus here refers to the generation of these *concilia* and is more nuanced than the translation suggests. This process involves both moulding – that is, giving a degree of shape or form – and pressing them out along their course out of the body.[9] *Articulo* and *figuro* here are also multiply determined; they have the conventional meanings of "to articulate" and "to pronounce", as well as meanings that evince concrete physical changes, playing on the fact that once *voces* are emitted, they can become intermediaries of hearing. Lucretius thus indicates that (distinct) uttering happens partly through physiological functions of the tongue and lips. These body parts give greater definition to the shape of the forthcoming assemblages. The tongue makes the joints and limbs of the shapes more distinct. The lips do some further moulding – perhaps a sharpening of the contrasts. Reinhardt also makes this point, juxtaposing 4.549–67 to the evidence of grammatical handbooks.[10] However, this is not the case with all sounds. Groans, for instance, are sounds that we would consider inarticulate and sometimes even involuntary. According to Lucretius, a groan (*gemitus*) is formed and pressed out (*exprimitur*) in part because the seeds of the *vox* (*semina vocis*) are ejected en masse. Such sounds do not entail the emission of articulated assemblages.[11] Therefore the shaping process is deliberate, and associated with the meaning or signification of the *vox*.

As an empiricist, Lucretius has to reconcile this mechanism with our experience. How can multiple people hear the same thing, once the *vox* is emitted?

Praeterea verbum saepe unum perciet auris
omnibus in populo, missum praeconis ab ore.
in multas igitur voces vox una repente
diffiguit, in privas quoniam se dividit auris,
obsignans formam verbis clarumque sonorem.

Moreover, one word sent from the mouth of a herald often arouses all the ears in the crowd. Therefore one *vox* suddenly disperses into many *voces*, since it distributes itself among many individual ears, impressing the form and clear sound of words.

(*DRN* 4.563–7)

These lines explain one word (*verbum … unum*) with one *vox* (*vox una*). Each assemblage of *vox* disperses into many *voces*. Each of these *voces* causes the same thing to be heard clearly and distinctly by the nearby listeners. Therefore, the shaping process must apply equally to each and every assemblage of a given emission or stream of *vox*.[12] Holmes and Shearin interpret the *vox* as stamping or sealing (*obsignans*) the ears here;[13] later we shall see that this does not quite fit with the nature of the interaction.

Lucretius confirms for us a few lines later that all the *voces* generated by the initial *vox* are essentially the same.

Praeterea partis in cunctas dividitur vox,
ex aliis aliae quoniam gignuntur, ubi una
dissiluit semel in multas exorta, quasi ignis
saepe solet scintilla suos se spargere in ignis.

Furthermore, the *vox* is dispersed in all directions, since some *voces* are generated from others, when one *vox* has arisen and once it has burst apart into many, just as a spark of fire often tends to scatter itself into its own fires.

(*DRN* 4.603–6)

The initial assemblage of *vox* therefore divides into many identical assemblages of exactly the same nature.[14] These are distributed everywhere. This allows all the listeners in the crowd to hear exactly the same word. The word *vox* thus means "voice" or "the ability to utter articulate speech". It also means "the articulated hearing-causing bodies which one utters". Lucretius at least sometimes equates it with *verbum* ("word").[15]

Sonus, on the other hand, means a "sound" or "noise" in general, for Lucretius. These perceptions involve a hearing-causing body that was lacking in articulation from the beginning or a hearing-causing body that has lost its articulation. The former would be the case with indistinct sounds, like the groans mentioned above. With respect to the latter, Lucretius usually links *sonus* to *vox* and *verba* in cases where these stimuli have been blunted and otherwise lost their shape prior to interacting with the ear.[16]

Lucretius' *vox* and *sonus* thus roughly correspond to the *vox articulata* and *vox confusa* specified by Donatus, in a tradition going back to Varro. This distinction has recently been discussed by Butler. But a grammarian glosses Donatus' definition of *vox* as *sive sonus*, indicating that *vox* and *sonus* are interchangeable. That is not the case here; *DRN* 4.565–7 makes clear that, for Lucretius, *vox* is a type of *sonus*. This keeps with typical Latin usage at Lucretius' time.[17]

The materiality of sound also helps us to make other distinctions. For instance, in demonstrating that *voces verbaque* (4.532) consist of bodily elements, Lucretius tells us that the underlying difference between *clamor* and *vox* is the number of first-beginnings, not their nature. The greater quantity of first-beginnings in *clamor* results in a greater roughening of the passage(s) through which both are emitted.[18] On a related note: one of his proofs that the *vox* (5.540) is corporeal is that we lose body by giving a speech (*sermo*, 4.537) – particularly one delivered with great *clamor* (*summo … clamore*, 4.539) – or by talking a lot (*multa loquens*, 4.541). In this context *clamor* seems to be inherently linked to *vox*, rather than to *sonus*, and manifests itself as volume.

The last two passages quoted previously together indicate that the interaction of the ear with a single hearing-causing assemblage can suffice to effect one's hearing of the initial emitted sound. They also indicate that one seems to hear a speaker at the same time as the speaker emits a word. Why then do we sometimes experience a delay between seeing distant lightning and hearing its thunder?[19] Such cases are useful for clarifying how the processes underlying our experiences work. Hearing-causing bodies move through the air extremely quickly, but their speed must be understood relatively.[20] Lucretius tells us that they are transmitted through the air more swiftly than smell-causing bodies, but far less so than *simulacra* (the stimuli which interact with the eyes and the *animus*).[21] Thus we generally see lightning before hearing thunder. We can hear no more quickly than a hearing-causing body can travel.

The speed of sound reveals more. At 4.794–801, Lucretius tells us that "the now" or the smallest perceptible moment of time is equivalent to the time it takes to emit one *vox* (*cum vox emittitur una*).[22] This interval circumscribes apparent simultaneity.[23] As rapidly as one emits one hearing-causing assemblage, even the smallest possible, the steps of that physiological process occur far more swiftly. Consider Lucretius' claims that the first-beginnings of the *vox* come from throughout the body, including explicitly the sinews (*nervis*, 4.536), and that we are able to draw out speech continuously (*perpetuus*, 4.537). The latter implies that we perceive no delay between willing deliberate speech and the action of speaking.[24] The steps of the physiological process of generating, emitting and shaping the *vox* must therefore occur with

incredible rapidity.[25] There is also no delay experienced between the orator speaking and anyone present hearing, as we saw above. The process of division, dispersal, and transmission of the *vox*, as well as its interaction with the ear, and the chain reaction which that sets off within the body, must all also occur within an "instant", since the speaking and hearing seem to occur simultaneously. Therefore, the mechanisms underlying the overall process all work so fast that we experience at most a moment's delay between willing speech and hearing what is spoken.

The time spent in transmission – however brief – can have consequences for our perception through the shape of the stimuli. Lucretius' account of this reveals further details about the mechanism by which we experience sound. In line 4.567, as we have seen, the *forma*, or the shape and size, of hearing-causing bodies is associated with the clarity of the respective sounds. Hearing-causing bodies of different shapes more generally lead to the perception of different sounds, like different words. Those that have smooth shapes are accompanied by feelings of pleasure when they interact with the ears; some that have rough shapes are accompanied by pain.[26] This is consistent with Lucretius' account of the significance of stimulus-shape to all of the so-called five senses, or *sensus corporis*. Generally those first-beginnings with which such contacts are pleasurable are smooth and round. On the other hand, those rough and hooked wound, and those with small projecting angles – being neither smooth nor hooked – merely stimulate.[27] These interactions are not limited to collisions, like billiard balls; they may occur as frictive contact between structures. One might think that these interactions start at the surface of the ears, but the opening lines of Lucretius' treatment of hearing in book 4 indicate otherwise:

> Principio auditur sonus et vox omnis, in auris
> insinuata suo pepulere ubi corpore sensum.
>
> Firstly, every *sonus* and *vox* is heard when, *having insinuated themselves into the ears*, they impel *sensus* with their body.
>
> (*DRN* 4.524–5)

The phrase *in auris insinuata*, italicized in the translation, indicates that the interactions occur in the ears and that the bodies travelling into them make a winding sort of motion, perhaps suggesting the shape of their pathways (*foramina*). Lucretius uses the verb *insinuo* throughout the poem and in at least six cases with respect to the bodies involved in sensory interactions, including all five of the *sensus corporis*.[28] There is little distinction between a sense organ's apparent surface and its inner passages. All *concilia* contain void, so all seemingly solid macroscopic objects and surfaces are actually porous.[29]

The precise shape of these passages influences which hearing-causing bodies one is more open to sensing or interacting with[30] – essentially, no square pegs in round holes. The hearing-causing bodies that do not "immediately" interact with the ears of a perceiver may continue to travel for a while after emission,[31] sometimes affecting these shapes.

Hearing-causing bodies can pass through many sorts of assemblages, including air and even walls; usually they remain intact in the process:

> Quod superest, non est mirandum qua ratione,
> per loca quae nequeunt oculi res cernere apertas,
> haec loca per voces veniant aurisque lacessant.
> conloquium clausis foribus quoque saepe videmus,
> nimirium quia vox per flexa foramina rerum
> incolumis transire potest, simulacra renutant;
> perscinduntur enim, nisi recta foramina tranant…

> What is more, there is no need to marvel at why *voces* come through these places – places through which the eyes are unable to perceive manifest objects – and stimulate the ears. We also often observe a conversation behind closed doors, undoubtedly because the *vox* is able to pass intact through the winding passages of things; *simulacra* do not, for they are completely rent unless they pass through straight passages.
>
> (*DRN* 4.595–601)

In using *lacesso* of the interaction between intermediary stimuli and the sensory structures of hearing, as he does elsewhere (for example, of vision), Lucretius plays on multiple meanings of the word; he thus indicates that the interaction that is the proximate cause of the perception of a sound is one of stimulation or excitement, with the understanding that the arousal occurs by assailing the sense organ.[32] If a collision or frictive brushing-against is sufficient to stir the constituents of the *animus–anima* complex (which are scattered throughout the structures of the ear) to such an extent that they start buffeting one another across the distances that separate them and cause a kind of chain reaction, then one will experience sound. As these lines indicate, particularly by *incolumis* ("intact"), the lack of change in shape means that sound is usually clear.

However, passing through another substance – even air – eventually disturbs their original order and blunts their shape. The result can be hearing a noise rather than the original word. Presumably more solid intervening *concilia* blunt and confuse sounds more quickly.[33] Yet, encountering relatively solid assemblages, like stone, may cause hearing-causing bodies to bounce back, explaining echoes in the mountains.[34] They are probably pushed back or repelled (*verba repulsantes*, 4.579) because the stone's passages are too small for hearing-causing bodies to enter. Therefore, the nature of the assemblages through which a stimulus passes after its emission can affect the nature of the

stimulus and thus the perception of the original sound, but any distortion occurs prior to that stimulus's interaction with the sense organ.

Owing to this potential for distortion, one cannot just assume that one always hears the original sound accurately.[35] Now, Lucretius' epistemology is empirical. He argues that the *sensus* (our feelings and the senses) cannot be deceived and that they are the source of our idea of truth.[36] But that is not the same thing as claiming that they *are* the truth. Hearing is real and true (as per the Epicurean dictum that all *aisthēseis* are *alētheis*) in the sense that one can reliably and accurately perceive the emitted hearing-causing bodies as mediated by the intervening circumstances.

Listening and learning

Lack of distortion is necessary but not sufficient for accurate hearing. Lucretius indicates the importance of both sound and concentration in some of his more programmatic passages, such as certain addresses to the reader. He advises coordinating sensory foci in order to promote learning; it is not the sight but the sound of the poem he emphasizes in such contexts. Introducing the perception of the *animus* as the main subject of the second half of book 4, Lucretius says:

> Nunc age, quae moveant animum res accipe, et unde
> quae veniunt veniant in mentem percipe paucis.
>
> Come now, accept the things which move the *animus*, and by means of a few words take into the *mens* where the things which come into it come from.
>
> (*DRN* 4.722–3)

Lucretius intends this passage to be understood in several ways simultaneously, which a single translation – even a rather literal one – cannot quite capture. The imperatives *accipe* and *percipe* conventionally mean "hear" and "observe", respectively. In this context *quae … accipe* signifies both physically "accept into the *animus* the things which move it"[37] and "hear about the things which move the *animus*". Similarly, *unde … percipe* signifies both physically "take into the *mens* the source of the things which come into it", on which reading *in mentem* is sylleptic, and "observe where the things which come into the *mens* come from".[38] This multiplicity of readings only becomes apparent in hindsight, once the underlying mechanisms have been understood through reading the rest of book 4; by the same token, the passage anticipates the information that it introduces and thus primes the reader for it.

Lucretius employs a similar strategy at the end of the introduction to the main account of sleep:

Tu mihi da tenuis aures animumque sagacem,
ne fieri negites quae dicam posse, retroque
vera repulsanti discedas pectore dicta,
tutemet in culpa cum sis neque cernere possis.

You, grant me finely attuned ears and a keen *animus*, in order that you may not deny that the things which I will discuss can happen and in order that you may not depart because your breast is repelling true sayings, although *you* are to blame and not able to perceive them.

(*DRN* 4.912–15)

Emphasizing the ears and the true statements (*vera dicta*) that he will say (*dicam*), Lucretius here employs the slippage between different ways of reading poetry. In being read, this poem or song will probably also be heard – at least by the reader. Reading silently was an option, but only one of a number for an individual in antiquity. For the author too, the written text was potentially both an auditory and a visual medium. For much of history, it was often (but by no means exclusively) the case that, even when reading to oneself, one read aloud – and, prior to word-breaks in the text, punctuated to some extent by ear.[39] Thus, in the very act of "reading" *DRN*, one is effectively becoming the author (i.e. Lucretius); this is particularly the case when reading such addresses and injunctions aloud. The possibility that an empirical reader is taking on multiple roles has interesting repercussions for the relationship between teacher and student[40] and for our understanding of how Lucretius' didactic programme actually functioned in practice.

Lucretius commands that the ears and the *animus* be finely attuned (*tenuis* and *sagax*, respectively) to his statements – that is, ready to hear the truth in all its nuance.[41] *Cerno* here has multiple valences; it simultaneously indicates sifting, perceiving and understanding. Accordingly, lines 4.912–15 represent successful hearing as at least a partial consequence of the coordination of the foci of the ears and *animus*, with respect to both physiological configuration (and thus the stimuli with which they are open to interaction) and the experience of attention. The coordination of the foci of these structures can be quite potent; for example, the interaction with thought-*simulacra* and name of one's lover together are the food of love (*pabula amoris*).[42] The breast or *pectus* in 4.914, as often in *DRN*, is metonymy for the *animus* or *mens*; if its focus is not coordinated with that of the ears, the result will be like echoes in the mountains, as implied by the allusion of 4.914 to 4.579.[43] The stimuli reaching the ears will have little effect – noise at best – as though the ears are unable to take in and accurately hear what the *animus* has repelled. Elsewhere Lucretius likens that to being metaphorically deaf (*surdus*).[44] Similarly today we use expressions like "what I told him went in one ear and out the other" and – more akin to the process Lucretius is describing – "it did not even go in one

ear" to speak of mere hearing as compared to really listening.[45]

The poet believes the reader's focus to be within the reader's control – otherwise there would be no need for, or point in, such didactic injunctions. Lines 4.912–15 evince this through both what is said and how: for example, through Lucretius' emphatic use of *tu* and *tutemet in culpa* in conjunction with the imperative *da* and four second-person singular subjunctives. Compare the remarkably similar address to the reader in the proem to book 1:

> Quod superest, vacuas auris animumque sagacem
> semotum a curis adhibe veram ad rationem,
> ne mea dona tibi studio disposta fideli,
> intellecta prius quam sint, contempta relinquas.

> What is more, apply your empty ears and keen *animus*, removed from cares, to true reason in order that you may not abandon my gifts, arrayed for you with constant focus,[46] having scorned them before they were understood.

(*DRN* 1.50–3)

The two addresses to the reader are linked by intratextual echoes,[47] and Lucretius again emphasizes the text as auditory medium. His gifts (*dona*) are tantamount to true reason (*vera ratio*) rather than simply true sayings (*vera dicta*). Both the *dona* and *vera dicta* are, in a sense, metonymy for the truths that they express. According to Epicurean language theory, true *dicta* are grounded in the perception of the natural world. The *dona* and *dicta* of Lucretius and of Epicurus inculcate the truth about the nature of things, as does the perception of the natural world – which their *dicta* ensure we shall interpret correctly. Again, these sayings, which Lucretius is setting out, should literally "sink in". Hence he asks that the foci of the ears and *animus* be coordinated and keen. Lucretius wants the reader's overall focus to complement his own such that it is receptive to what Lucretius has been focused on setting out. Neither the ears nor the *animus* should be occupied with anything else, which means they should not be paying attention to something else and should remain free from other stimuli.[48] Therefore, the physiological mechanism underlying hearing is not an active–passive model, in which the stimulus acts upon passive sense organs, as in Aristotle.[49] For Lucretius, the experience of sound emerges from the interaction between a hearing-causing body and the structures of an ear when both the ears and *animus–anima* complex are priming themselves to receive it. Lucretius thus primes the reader to listen, at the beginning of *DRN* and throughout – psychophysiologically preparing him or her for what the poem teaches.

Language

Language can serve in this way as a means to our *ataraxia* – that pleasurable tranquillity that the poem aims to help us achieve – but, according to Lucretius, in the infancy of the world, no living creature possessed language. The Epicureans generally believe that language was not handed down to us – not taught by a human or divine name-giver, nor was the ability to produce and understand sounds. Lucretius depicts glossogenesis, the development of language, as having occurred in two ways: ontogenically and phylogenically. In other words, each creature developed the ability to communicate as an individual,[50] and each species developed a system of conventional signifiers and meaning. Lucretius' account rests on an analogy or comparison between humans and animals; some scholars, such as Campbell, Atherton and Reinhardt, have found this contentious.[51] Gale suggests that Lucretius is focusing on the first of the three stages in Epicurus' account of the development of human language—that is, when *natura* was the primary factor in what sounds were made and when, before convention (stage two) and deliberate introduction (stage three).[52]

Lucretius discusses glossogenesis in his account of the infancy of the world and emergence of civilization. The content and context of this discussion show that glossogenesis functions as an example of how all creatures develop, with respect to their physiology and abilities, on the basis of both their inherent natures and their circumstances.[53] Certain possibilities, which exist in a creature's physical and metaphysical nature, manifest (or not) and develop in accordance with their *utilitas*.[54] *Utilitas* is translated variously as usefulness, utility, need and the like; what it amounts to for Lucretius, particularly in the second half of book 5 of *DRN*, is that which – by trial and error[55] – proves conducive to survival and to functioning effectively in one's environment.[56] His discussion of glossogenesis begins:

> At varios linguae sonitus natura subegit
> mittere, et utilitas expressit nomina rerum,
> non alia longe ratione atque ipsa videtur
> protrahere ad gestum pueros infantia linguae,
> cum facit ut digito quae sint praesentia monstrent.
> sentit enim vis quisque suas quoad possit abuti.
>
> But the nature of the tongue compelled them to send off various sounds, and *utilitas* formed the names of things. In a quite similar way the very infancy of the tongue seems to bring children to gesture, when it makes them show with a finger the things which are present. For each creature feels to what extent it can make use of its powers.
>
> (*DRN* 5.1028–33)[57]

These lines depict glossogenesis as an aspect of ontogeny developed through *utilitas*. As Bailey notes, *varios linguae sonitus … mittere* is nearly repeated at

5.1044.[58] Nevertheless, several factors suggest that *linguae* should be taken with *natura*, as well as with *sonitus*: Lucretius' emphasis on ontogeny, the interlocked word order or synchysis at 5.1028, the elaboration of these ideas in 5.1028–40 more generally and at 5.1056–90, and the parallel with 4.834–55. Lucretius thus indicates that a creature's nature included the potential to make sounds, that different creatures could make different sounds depending on the physiology of their tongues, and that some aspects of their nature – including feeling (*sentit*, 5.1033) – led to the manifestation of these powers. This reading of *natura* obviates the intimations of necessity that taking *linguae* with *sonitus* alone might carry.[59] It explains why different sorts of tongues are capable of different sorts of sounds.[60] There may also be some play on *lingua* as both "tongue" and "language".

Some of these points bear further elaboration. The phylogenic origin of language occurred through learning as well, as Lucretius emphasizes, for example, through the play on *infantia* as both "infancy" and "speechlessness" (5.1033).[61] He compares the tongue and its sounds and names with young children communicating by means of pointing with their finger, as well as with other body parts of animals and what they use them for (5.1034–40). Reinhardt treats 5.1028–40 as a case of multiple-correspondence simile.[62] That said, the tongues of all creatures are capable of pressing out as well as forming (*expressit*) things – at least to varying degrees, as we have seen. These uses of the tongue, finger, horns, claws, feet, teeth and wings are characterized as the manifestation of particular powers or abilities of each creature. Moreover, *pueros infantia* (5.1033), although only linked by association of ideas and by position, may well echo *puer … infans* (5.222–3) and thereby recall 5.222–34, which indicates that the faculties of animals are far better suited to enabling survival than are those of humans.[63] Sedley suggests that the particular animal examples in 5.1028–40, as well as Lucretius' rendering of lion cubs with the Greek *scymni* (5.1036), indicates that "this instinctive use of innate powers is the same the world over, even though the nature of the powers themselves may vary from region to region".[64] Articulate speech is therefore a power – here, at least of mature humans; the infant perhaps has it potentially, as the first humans may have had. In its context, then, the passage quoted immediately above thus indicates that – with respect to individual creatures – certain powers develop as one's constitution matures. That said, the first humans may not have developed language fully until they were already mature, as indicated by their attempts to communicate, however imprecisely (*balbe*), with their voices or sounds (*vocibus*) and gesture (*gestu*) in attempt to form the first communities.[65] There was at least some pre-linguistic communication within the human species in attempts to attract mates. Articulate speech was not invented for the sake of its usefulness, but rather

developed in part along with know-how regarding the faculties of the tongue.[66] Nevertheless, the company of other members of one's species may facilitate the process of learning or developing language.[67] In other words, usefulness refined language and fully developed language may well have depended on the formation of intraspecies communities.

Lucretius tells us that particular feelings compelled the first *voces*, and it seems that certain feelings affected similar individuals[68] in similar ways, such that they made similar sounds under similar circumstances, and thus may have recognized the meaning when another did so.[69] Lucretius clinches his account of this development of language in the following lines:

> Postremo quid in hac mirabile tantoperest re,
> si genus humanum, cui vox et lingua vigeret,
> pro vario sensu varia res voce notaret?
> cum pecudes mutae, cum denique saecla ferarum
> dissimilis soleant voces variasque ciere,
> cum metus aut dolor est et cum iam gaudia gliscunt.
> …
> ergo si varii sensus animalia cogunt
> muta tamen cum sint, varias emittere voces
> quanto mortalis magis aequumst tum potuisse
> dissimilis alia atque alia res voce notare.

> Finally, what in this situation is so very marvelous if the human race, for whom the *vox* and *lingua* are lively, were marking things with a different *vox* for a different *sensus*, when *mutae*[70] herds – when even generations of wild animals – are accustomed to produce different and various *voces* when there is fear or pain and when now joys swell up… . Therefore, if various *sensus* compel animals, although they are nevertheless *muta*, to emit various *voces*, how much more fitting is it that humans were able then to mark different things by means of a different *vox*.

(*DRN* 5.1056–61, 1087–90)[71]

In these lines one could say that *vox* is used to mean both voice and sound, depending on the extent to which the noise in question resembles human language,[72] but a less anthropocentric reading is more plausible. Both humans and animals were motivated to emit *voces* by their common feelings. Lucretius uses one word, *vox*, to signify the articulated sounds of both groups.[73] Lucretius attributes a *vox* to animals throughout the poem – generally as "voice", the ability to make articulate sounds. Animal *vox* is explicitly indicated with respect to the following: birds in general,[74] including swans[75] and roosters in particular,[76] goats (including kids),[77] dogs in general[78] and particularly Molossian hounds,[79] *pecudes mutae* and, here, to *saecla ferarum*[80] and *muta … animalia*.[81] Similarly, *querella* in Lucretius generally means an articulate lament;[82] it is explicitly linked to *vox*[83] and used of human speech.[84] *Querella* is used of swans and of a mother cow whose calf has been sacrificed

to the gods.[85] Lucretius' celebrated mimesis of the sounds made by animals, including dogs, horses and birds, falls in between the lines of the passage above.[86] As Butler notes, some of these are used by other ancient authors, including contemporaries like Varro, as examples of sounds that approach the articulate sounds of human language without achieving language.[87] Such considerations suggest that Lucretius believes that both humans and animals developed the same sort of practice of marking different things with particular articulate sounds, according to the same processes and underlying mechanisms.[88] These considerations also raise questions about whether or to what extent Lucretius believes animals have the capacity for language, as well as about what precisely he means by the adjective *mutus*.

The conventional view, exemplified by Atherton, Bailey, Camardese, Konstan, Reinhardt, Stevens and Verlinsky, is that animals lack language and, by extension, reason.[89] *Mutus* in *DRN* is often translated as mute, dumb, inarticulate or unspeaking. Lucretius uses it in various contexts, such as when referring to fish.[90] Some uses are more obviously metaphorical, referring to things that are unexpressed or individuals who are silent.[91] For example, Lucretius uses the term of an overly reticent woman[92] and of Iphigenia, who is mute with fear (*muta metu*, 1.91). This indicates that some feelings (or the beliefs associated with them) may lead to the deliberate avoidance of speech. Similarly, as we have seen, Lucretius uses the word deaf (*surdus*, 5.1052) metaphorically of men who do not listen rather than lack the ability to hear. Therefore the label *mutus* does not necessarily entail the inability to make articulate sounds or the lack of language (either potentially or manifestly). This lends weight to an interpretation of *mutus* closer to that of Gale and Campbell; it may simply indicate a lack of human language, sometimes even just at a given moment.[93]

Gale intriguingly suggests that the verbal echoes linking 5.1056–61 and 5.1087–90 give it the effect of a q.e.d. construction, where Lucretius' mimesis of the sounds of animals at 5.1063–86 constitutes the demonstration of the bracketing argument.[94] The phrase *alia atque alia* at 5.1090 is a case of wordplay and soundplay involving repetition, alliteration and double elision, with both of the identical elements modifying *voce*. Read aloud, particularly in the concluding line of an account of glossogenesis, it may be intended to qualify the literal meaning of 5.1089–90.[95] Regardless, the final line of the glossogenesis narrative is a striking example of how Lucretius often uses the sound, metre and visual structure of the line to mirror iconically the phenomena he is describing. He inscribes in both the written materiality and the orality of the text – and thus in the very hearing-causing bodies that one would emit and hear as one read – layers of meaning and nuance that go beyond the literal signification of the words. Such manipulation of the

relationship between form, content and context indicates keen awareness of the text as both a visual and auditory medium and, as Butler has argued, may constitute the sort of *ars* or poetic craftsmanship for which Cicero expressed admiration and that others, such as Virgil, sought to emulate.[96]

Poetry

Poetry began as a sonic art. Lucretius represents poetry, song and music as later forms of sound production. If they follow the pattern of the other crafts and skills in his narrative of the emergence of civilization, the chronology indicates that poetry, song and music are more complex forms of sound production than this study has considered so far. They originated this way:

> At liquidas avium voces imitarier ore
> ante fuit multo quam levia carmina cantu
> concelebrare homines possent aurisque iuvare.
>
> But men imitated the clear *voces* of birds long before they were able to harmonize smooth poems in song and delight their ears.
>
> (*DRN* 5.1379–81)

Lucretius characterizes poetry as something inherently tuneful. It was a gradual development as humans imitated first the *voces* of birds and, perhaps, eventually birdsong itself, with their own *voces*. Musical instruments followed.[97] The fact that poems (*carmina*) are a mimesis of *voces* raises questions about the precise relationship between articulated sounds, language and poetry.[98] Elsewhere Lucretius indicates that both articulated sounds *and* their extended relationship to one another can be required to create meaning. Take the famous analogy between the first-beginnings and the elements (letters or perhaps sounds, like syllables) of poetry:[99]

> Quin etiam passim nostris in versibus ipsis
> multa elementa vides multis communia verbis,
> cum tamen inter se versus ac verba necessest
> confiteare et re et sonitu distare sonanti.
>
> Indeed in my very verses you see throughout that many elements are shared by many words, although the words differ amongst themselves, with respect to both the meaning and the sound of sounding.
>
> (*DRN* 1.823–6)[100]

Fowler has discussed how Lucretius uses such principles in mimetically crafting both the language of the creative processes in the proem of book 1 and the relative dissolution of language in the poem's closing lines, as well as in

juxtaposing that nadir of civilization to its apex at the end of book 5 and beginning of book 6.[101] Indeed, the manner in which Lucretius employed sound in crafting his poetry, such as in cases of unusual metre, was among the features of *DRN* which caught the attention of its first Renaissance readers.[102]

The origins of poetry also feature in Lucretius' self-representation. He likens himself and his poem to a swan and its song. A bird sometimes associated with Venus;[103] the swan is characterized by Lucretius as one whose brief song is similar – in pleasantness to hear – to his own sweet-speaking verses (*suavidicis … versibus*) and better than the *clamor* of cranes.[104] Similarly, he likens Epicurus to a swan for his golden sayings (*aurea dicta*), which are golden in being true (cf. *vera dicta*).[105] The smooth (*levia*) quality of the songs and poetry mentioned at 5.1379–81 and the ensuing delight (*iuvat*) for the ears recall the fact that the interactions of sense organs with smooth stimuli is pleasurable. His account of the origins of poetry and representation of himself as a swan, with *DRN* as his song, reinforce the importance of *DRN* as an auditory creation. This connection implies that the poem is made up of smooth hearing- causing bodies that interact pleasurably with the ears. Since all creatures tend to pursue pleasure and avoid pain,[106] we are more likely to choose to listen to something pleasurable – that is, to attend to it with open, keen, and focused ears and *animus*, as we have seen from Lucretius' addresses to the reader. Thus the sweetness of this song, *DRN*, also contributes to its didactic aims, including instructing the reader in the principles behind and the mechanisms underlying its own effectiveness. Consider the programmatic passages in which Lucretius presents the famous analogy between a doctor's use of honey to administer bitter but ultimately salutary medicine and his choice of the poetic form to inculcate philosophy (1.921–50 and 4.1–25). Earlier in the same passages, in another analogy, Lucretius likens his exposition, his *DRN*, to sweet-speaking Pierian song (*suaviloquenti | carmine Pierio*, 1.945–6, 4.20–1). There is a point to this juxtaposition and its order: the sweet sounds of *DRN* and/or the smooth hearing-causing bodies generated by reading it aloud may well be, metaphorically speaking, some of the smooth bodies of Lucretius' honey.[107]

Conclusion

In conclusion, if a tree falls in the woods and no one is around to hear it, it does not make a sound – not according to Lucretius. The event disperses hearing-causing bodies into the air, but sound is the perception arising from the process of hearing – that is, from an interaction between hearing-causing bodies and the ears. The interaction sufficiently stirs the particles of the *anima*

distributed throughout the inner structures of the ear so as to cause a chain reaction among them. Lucretius also uses the term "sound" as shorthand for these hearing-causing bodies when the presence of a perceiver is assumed. Although both non-living things like the felling of a tree and lightning's thunder can send forth hearing-causing bodies, Lucretius devotes far more attention to the sorts of sounds that are deliberately produced by living creatures, *voces*. These are the moulded utterances involved in language. The possession of a *vox*, as the ability to emit articulated hearing-causing bodies, is a necessary condition of language. Lucretius believes that humans and animals share the sense and underlying mechanisms of hearing and sound production, and – through their nature and circumstances – humans, at least, developed that into language. Further developments in articulate sound production led to poetry, the soundscape of which Lucretius manipulates to make *DRN* – quite literally – a pleasure to listen to and learn from. In other words, by crafting the poem in accordance with his theories on sound and epistemological principles, Lucretius lays the groundwork for the success of *DRN*'s entire didactic programme.

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2 Glidden (1979: 155). The meanings of these Greek terms are complex and sometimes controversial, but all are encompassed by Lucretius' *sensus*.

3 On his terminology for atoms, cf. esp. *DRN* 1.54–61 and Sedley (1998a: 38–9).

4 Lucretius' evidence for the corporeality of these stimuli can be found in *DRN* 4.524–48. Aspects of the hearing process and its stimuli as described below are also treated by Epicurus, *Letter to Herodotus* 52–3, who seems to conceive of some aspects of voice and wind in a similar manner. Cf. Koenen (1999) and Koenen (2004).

5 *DRN* 2.834–6, 2.850–3, 3.221–3. Cf. Koenen (1997: 168) on *multas* in 4.674.

6 *DRN* 4.524–7. On this and some of the following points, cf. Epicurus, *Letter to Herodotus* 52. For a theoretical discussion of the relationship between *vox* and *sonus* as conceived particularly by the grammarians, cf. Butler (2015: 112–19).

7 *DRN* 4.528–32; cf. Epicurus, *Letter to Herodotus* 75–6.

8 We shall treat the idea-play and multiple meanings inherent in *articulo* and *figuro* in the discussion of this passage. On these lines in general, cf. esp. Holmes (2005: 534–46).

9 *Pace* the translation of Rouse and Smith (1992), *exprimimus* is being used here in a slightly different sense than in the mechanism of taste, at *DRN* 4.618 and 4.620 (the only two places in the poem where it is repeated exactly) where it means "to press or squeeze out", as with the water in a sponge. Here it signifies "to press out" in the sense of "emit" as well as "mould", which is more akin to *exprimat* (4.299) and to *expressit* (5.1029).

10 Reinhardt (2008: 131–4).

11 *DRN* 3.495–7; cf. 3.297. This may answer some of Butler's concerns about *querella* in Lucretius; on which, see below.

12 *DRN* 4.563–7; 4.603–6.

13 Holmes (2005: 541–3). Shearin (2015: 114).

14 Excepting size. Cf. Epicurus, *Letter to Herodotus* 52.

15 E.g. at *DRN* 4.554.

16 *DRN* 4.557–62 (describing the process by which *voces* as *verba* degenerate back into mere *sonus*), 4.568–71, 4.607–8, 4.613–14.

17 Cf. Butler (2015: 112–13). On the signification of the word *vox*, cf. also Koenen (1999). For another interpretation of the relationship between *vox*, *verbum* and *sonus*, which is more perceiver-dependent, cf. Holmes (2005: 543–5).

18 *DRN* 4.528–34.

19 *DRN* 6.173–218, esp. 6.183–4; cf. Koenen (1999) and Koenen (2004).

20 For further discussion of some of the following ideas about time and perception, see Zinn (2016: 137–9).

21 *DRN* 4.687–705, 6.164–72.

22 Bailey, Asmis and Morel, for example, also observe this; cf. Bailey (1947, 3: 1273), Asmis (1984: 120), Morel (2002: 198).

23 Cf. *DRN* 1.459–63.

24 *DRN* 4.535–41. In this it is similar to his representation of the gathering, welling up and emission of semen; 4.1040–8. The assemblages are not pre-gathered and waiting on the will of living creatures to speak or cry out any more than spirits are assembled and waiting on the mating of animals for a new mortal body to inhabit; 3.776–83.

25 This is further suggested by Lucretius' allusion to the tongue's mobility at *DRN* 4.551.

26 *DRN* 4.542–8.

27 *DRN* 2.401–7, 2.422–33, 2.461–3. This goes against Bailey's contention that kinship or unlikeness of stimulus with respect to one's constitution is responsible for the perception of something as pleasurable or painful; Bailey (1947, 3: 1261).

28 *DRN* 2.436 of touch, 2.684 of taste, 4.331 of sight, here at 4.525 of hearing, 6.778 and 6.802 of smell. On its usage in the poem more generally, cf. Farrell (1988: 183–4) and Gale (2009: 114).

29 *DRN* 1.511–19; with respect to macroscopic assemblages, and the degrees to which they contain void, cf. esp. 2.444–50, 2.460, 6.979–82, 6.990, 6.1010–11, 6.1031–8.

30 Cf. analogously the tongue at *DRN* 4.649–51, 4.655–62 and the eyes at 4.706–21, in which cases it is the constituents of a stimulus, not necessarily the whole, which interact with the passages of the sense organs.

31 *DRN* 4.568–9.

32 Cf. *DRN* 4.746–8, 4.758, 4.729, 4.731.

33 On the blunting and confusing of sound by passing through air, cf. *DRN* 4.557–62, and through more solid assemblages, such as doors and walls, cf. 4.595–600, 4.610–14 (on which, cf. Koenen [2004]). On the ability of sound to pass through other substances in general, cf. 1.354–5, 1.489–90, 6.951–2.

34 *DRN* 4.570–9, and perhaps 4.607–8.

35 Cf. Taylor (1980: 119–21), contra, for example, Rosenmeyer, who claims in an analogous context that the distinction between source and effluence is moot (Rosenmeyer 1996: 144–9, esp. 147).

36 *DRN* 4.478–9, Diogenes Laertius, *Lives of Eminent Philosophers* 10.32. Sedley has persuasively argued that the immediate context reflects Epicurus' charge that Scepticism, like determinism, is self-refuting; Sedley (1983: 33–4), cf. Sedley (1989: 135, n. 2).

37 In this, an instrumental *animo* is understood with *accipe*, on the basis of *animum*.

38 Cf. *DRN* 4.880: *tu percipe dicta*. On Lucretius' use of the vocabulary of sense perception in such didactic contexts, cf. Lehoux (2013).

39 Cf. esp. Knox (1968), Johnson (2000), and McCutcheon (2015); see also Kenney (1982: 12); related issues are dealt with *passim* in Johnson and Parker (2009).

40 Cf. Volk (2002) on the "teacher–student constellation".

41 With *tenuis aures*, cf. the *Oxford Latin Dictionary*, s.v. *tenuis*, meaning 11. With *sagax*, Lucretius intends both (i) "keen-scented" or "keen [with respect to the senses]" and (ii) "keen" or "acute" as in "perceptive" and "discerning". The adjective *sagax* occurs eight times in *DRN*: *animum … sagacem* (1.50), *ratione sagaci* (1.130), *ratione sagaci* (1.368), *animo … sagaci* (1.402), *sagaci mente* (1.1022), *animum … sagacem* (2.840), *animum … sagacem* (4.912, cf. 1.50), *sagaci mente* (5.420, cf. 1.1022). Thus it is consistently used of either the *animus*/*mens* or the *ratio* thereof; moreover, with the possible exception of 1.1022 and 5.420 (which are a verbatim echo), these expressions are used in contexts of or connoting learning.

42 *DRN* 4.1061–4.

43 *vera repulsanti … dicta* (4.914) with *verba repulsantes* (4.579), discussed above.

44 *DRN* 5.1052–5, cf. Gale (2009: 189).

45 For an overview of the modern philosophical debate on this; cf. Butler (2015: esp. 18, 201 n. 19).

46 Cf. the *Oxford Latin Dictionary*, s.v. *fidelis*, meaning 2b (and by extension 3). The physical counterpart of constancy (and thus faithful, loyal, reliable, trustworthy) is "marked by adherence" or firm. The word seems to be a hapax in *DRN* but *fides*, *fidus* and *fido* are generally used with respect to belief and the nature of dogs. Here *studium* should be taken as meaning attention and focus, and connoting study.

47 If the restoration of the line is correct, then with the exception of the form of the accusative, *auris animumque sagacem* is a verbatim intratextual echo between *DRN* 1.50 and 4.912; in both lines, the phrase also contains the accusative direct objects of an imperative (*adhibe*, 1.51; *da*, 4.912). On the arguments for this restoration, cf. Bailey (1947, 2: 604–5). Brown (1984: 52) is more skeptical of it and prefers Sauppe's restoration.

48 The dangers of preoccupation with false beliefs include preventing one from being open to the perception of things as they really are; cf. the case of the gods: *DRN* 6.68–9 with 6.75–8 *putare* (6.71) meaning "thinking" in the sense of "beliefs", which here are false.

49 Marmodoro, however, suggests the intermediate position that Aristotle posits that the two have mutually dependent powers, in the sense that each is essential for the activation of the other; Marmodoro (2014: esp. ch.1, 86–102).

50 It developed among the earthborn humans; since then each newborn child has had to develop

it. In this, as Atherton puts it, "linguistic ontogeny, on the whole, recapitulates phylogeny"; Atherton (2009: 214).

51 Of the three, Campbell is certainly the most sympathetic to the analogy; Campbell (2003: 310–1, 314, 321–2). Atherton is the least so; she denies animals language on the basis that, in her interpretation, they lack choice and thus the ability to control their "vocalizations" (and, by implication, that they lack reason) – and hence finds Lucretius' logic that the two are comparable to be a "non-sequitur". She thus reduces animals to effectively automata determined by their hormones and environment; Atherton (2005: 114). Reinhardt (2008: 137) calls the analogy "misleading at best".

52 Gale (2009: 187). On the three stages, cf. also e.g. Bailey (1947, 3: 1486–91). Konstan, following Vlastos, suggests that the second stage is present but barely so; Konstan (2008: 101). Others, e.g. Reinhardt (2008: 127–9), restrict the process to two stages, the emergence of names and the refinement of the lexicon, and argue that there is no explanation present of how we control the sounds we make. For an elaborate, but controversial, reconstruction of the process of glossogenesis, cf. Verlinsky (2005). Cf. Diog. Oen. fr. 12.ii.11–v.14 Smith.

53 Epicurus does the same; Epicurus, *Letter to Herodotus* 75–6. Cf. n. 60 below.

54 Cf. *DRN* 2.583–8, 2.937–43, 4.489–90, 4.834–42.

55 Cf. e.g. Gale (2009: 176–216 *passim*) on the emphasis placed by Lucretius on human learning through experimentation and imitation of their natural environment in *DRN* 5.925–1427.

56 As Long and Sedley (1987, 1: 135) aptly characterize it, nature and convention are not mutually exclusive; both explanatory concepts are at work, "with utility as the causal factor that links them together". They also note that this applies to the development of both language and social organization. Because of this relationship between the meanings of *utilitas*, here and elsewhere, the alleged opposition between the two interpretations of *utilitas* in this context are not as strong as Reinhardt (2008: 131, N.B. n. 15) suggests. He interprets it as "need", against the "usefulness" contended by particularly Schrijvers (1999: ch. 5) and Atherton (2005: 105, n. 14). Gale (2009: 187) also supports "usefulness".

57 This interpretation of *DRN* 5.1033 largely concurs with Bailey (1947, 3: 1492). *Vis*, here and elsewhere, is accusative plural; it means powers or faculties. Here *quoad* probably encompasses both "to what extent" and "to what end" (i.e. "for what purpose"). The translation cannot capture this.

58 Bailey (1947, 3: 1491, cf. 1284).

59 No external force, e.g. *Natura*, is involved, nor is any is any concept of instinct, as it is generally understood today; *pace* e.g. Atherton (2009: 208–9), Gale (2009: 187), Long and Sedley (1987, 1: 100, 135), Reinhart (2008: 135–6). There is also no quasi-Stoic conception of innate knowledge at work here (even indirectly, *pace*Dierauer [1977: 198 n. 21]). Whether or not Lucretius is debating with the Stoics at various points in *DRN* is beyond the scope of this study (on which topic, one influential interpretation is Furley 1966). Both Nature and instinct would imply determinism. The reading "instinct" could only work if it would mean: the non-deterministic tendency towards actions that are likely to follow from one's inherent nature (cf. *DRN* 4.486, 5.1033). If so, then "instinct" would be no more teleological than the Cradle Argument (on which, see below) and probably partly follows from it; i.e. pleasure and pain may be involved in the continual process of discovering through trial and error how to use our powers. Cf. Warren (2014: e.g. 4–6) that there are pleasures involved in learning. Whether or not *natura* should be read as instinct, such things as words and powers are discovered and refined in a non-teleological manner. Finally, Proclus, writing on Plato's

Cratylus, notes that Epicurus thinks that the names for things came about not through experience-based knowing (epistēmonōs) but through one's nature (phusikōs), as is the case with animals and their sounds (Usener 335); Reinhardt (2008: 137, n. 35) seems to read this testimonium somewhat differently.

60 Cf. Epicurus, *Letter to Herodotus* 75–6: ὅθεν καὶ τὰ ὀνόματα ἐξ ἀρχῆς μὴ θέσει γενέσθαι, ἀλλ' *αὐτὰς τὰς φύσεις τῶν ἀνθρώπων* καθ' ἕκαστα ἔθνη ἴδια πασχούσας πάθη καὶ ἴδια λαμβανούσας φαντάσματα ἰδίως τὸν ἀέρα ἐκπέμπειν στελλόμενον ὑφ' ἑκάστων τῶν παθῶν καὶ τῶν φαντασμάτων, ὡς ἄν ποτε καὶ ἡ παρὰ τοὺς τόπους τῶν ἐθνῶν διαφορὰ ᾖ (text here from Long and Sedley [1987, 2: 98]). The emphasis is mine and concurs with Reinhardt's (2008: 127) reading of this as "men's own natures" (suggesting a constitutional difference between *ethnē*). Atherton (2005: 101) translates it similarly, but interprets the whole account as being about involuntary vocalizations.

61 On the etymological gloss on *infantia* in *infantia linguae*, cf. Reinhardt (2008: 131), Gale (2009: 187). Cf. Epicurus, *Letter to Herodotus* 75–6, that the refinement of language varied with how quickly the *logismos* of men with different natures developed the initial sounds that they made under various circumstances.

62 Reinhardt (2008).

63 On that passage, Fowler (1997: 208) aptly states that Lucretius is "demonstrating that human beings do not occupy a privileged position among the species of the world"; cf. Holmes (2013), who interprets it as even more unfavourable towards humans.

64 Sedley (1998a: 56).

65 *DRN* 5.1022.

66 Cf. *DRN* 4.834–42 with 4.851–5, esp. 4.837–8.

67 Reinhardt (2008: 135) also suggests this, but on the basis of a different logic.

68 I.e. creatures with similar natures, such as members of the same species.

69 The questions of precisely how particular sounds are related to particular things and of how that relationship came about according to the Epicurean account(s) of glossogenesis are beyond the scope of this investigation; for a useful overview, cf. Long and Sedley (1987, 1: 100–1).

70 On the meaning of the adjective *mutus*, see below.

71 Content, context and the strong verbal echoes encourage this juxtaposition of *DRN* 5.1056–61 and 5.1087–90. On the verbal echoes, cf. Gale (2009: 190). For some further bibliography on this passage from 1896 through 1990, cf. Atherton (2005: 114, n. 30).

72 Cf. the uses of *vox* and the verb *voco* throughout the larger context of the account and the discussion thereof by Campbell (2003: 311, 313).

73 Cf. Epicurus' use of *phthongos* (a clear and distinct sound) at, e.g. Epicurus, *Letter to Herodotus* 38, which Atherton (2009: 202), following Everson, suggests may include "talk", "speech", and the "sounds" made by birds, animals, and even the wind – and argues that it is conspicuous that Lucretius avoids making it clear whether "the 'sounds' in question are specifically human". If so, that just increases the similarity of the species' communications.

74 *DRN* 2.146 (*liquidis*), 5.1081 (here both named species and winged races in general), and 5.1379 (*liquidas*).

75 *DRN* 4.542 (inclusively) and probably also at 4.547–8, but it is not certain (owing to textual

corruption) – on which, cf. Bailey (1947, 3: 1246), Rouse and Smith (1992*ad loc.*).

76 *DRN* 4.711 (*clara*).

77 *DRN* 2.367.

78 *DRN* 4.992.

79 *DRN* 5.1063–72.

80 *DRN* 5.1059–60.

81 *DRN* 5.1087–8.

82 It is thus distinct from the wailing (*vagor, vagitus*), e.g. of the (*infans*) *puer* at *DRN* 2.576–80 and 5.222–7, and comparable to one meaning of *gemitus* above. One (partial) exception to its generalization as an articulate lament may be that of music at 4.584 and 5.1384; further on song and music, cf. below.

83 Cf. *DRN* 4.549, 6.1245.

84 *DRN* 3.955, 4.584, 4.1182, 5.1384, 6.16, and 6.1159. For a different interpretation of *DRN* 6.1159, and of *querella* in relation to animals, cf. Butler (2011: 52).

85 *DRN* 2.358 with respect to the mother of the *vitulus* and with respect to swans at 4.549 (*liquidam*).

86 *DRN* 5.1063–81. On the mimesis, see in particular Friedländer (1941: 352), Bailey (1947, 3: 1494–6), Atherton (2005: 105), Campbell (2003: 314–21), Gale (2009: 189).

87 Butler (2015: 113–14).

88 *Mortalis* (*DRN* 5.1089) does not exclude it; although a contrast is suggested at 5.1087–90 between *mortalis* and *animalia*, and that contrast is reflected in the translation above. Elsewhere Lucretius does use both words to refer to all living creatures. As one reader's report was kind enough to point out, Lucretius only uses the verb *noto* of humans in his account of glossogenesis (at 5.1043, 5.1058, and 5.1090). Nevertheless Lucretius asserts earlier in the poem that animals can distinguish one another just as humans do (2.349–51, esp. *inter se nota cluere*, 2.351, and *clueo* can connote naming; cf. the *Oxford Latin Dictionary*, s.v. *clueo*, meaning 1b).

89 Cf. e.g. Bailey (1947, 3: 1497), Camardese (2010: 78), Konstan (2008: 97–8). For a survey of opinions on the subject, cf. Campbell (2003: 283–94).

90 *DRN* 2.342–3, 2.1082–3.

91 *DRN* 2.625, 4.1057, 5.842.

92 *DRN* 4.1164; she is not incapable of communication with other humans by means of human speech.

93 Cf. Gale (2009: 189) that animals are "dumb" or "inarticulate", in the sense of lacking human language, because they "lack the vocal organs necessary for articulate speech". Campbell (2003: 313) posits a weaker version of this argument. The crucial distinction may be one of degree; i.e. the human *vox et lingua vigeret* (5.1057) by comparison.

94 Gale (2009: 190). *DRN* 5.1062 supports this interpretation.

95 The nature of the qualification would depend on whether one did take this as part of a Q.E.D. construction and whether one interpreted the argument as supporting the case for animal language.

96 Butler (2011: 37–62; esp. 37–9, 60). Cicero, *Letters to Quintus* 2.9.4.

97 *DRN* 5.1379–81; cf. 5.1382–1411, esp. 5.1382–7 on the development of musical instruments.

98 For an overview of the modern debate on the relationship between voice, speech, language and interpretability, cf. Butler (2015: 17–24).

99 For discussion and illustrations of this, see esp. Friedländer (1941).

100 The "resounding [or ringing] sound" is a more common interpretation of *sonitu sonanti*, but cf. Sedley (2018), this series, on "the touch of touching" as an expression in Epicurean discourse. My thanks to David Sedley for discussion and a pre-publication draft.

101 Fowler (1997: 229–30).

102 Palmer (2014: e.g. 45).

103 Lazenby (1941: 42). Cf. Attic red-figure lekythos, Aphrodite riding a swan, Ashmolean Museum AN1891.451 (fifth century BCE) and Pistoxenos painter, Attic red-figure kylix, Aphrodite riding on a swan, British Museum D2 (*c.* 480–70 BCE).

104 This is strengthened by Lucretius' emphasis in *DRN* 4.542–8 on the shape of the first-beginnings of *vox*, which affect its suitability for our hearing, and the emphatic contrast between the creature's *vox* and the implied *clamor* of the *tuba*, a trumpet or war-trumpet that was effectively synonymous with loud sound. The example of the *tuba* does not undermine this interpretation of *clamor* as a type of *vox* because the hearing-causing bodies involved should be thought of as originating from within a human (and altered by a tool). The idea of shouting may also be implicit in *obtundere* at 5.1053–5: *neque enim paterentur | nec ratione ulla sibi ferrent amplius auris | vocis inauditos sonitus obtundere frustra.*

105 *DRN* 3.6–13, 4.180–2, 4.909–11. Epicurus is likened to a horse as well as a swan (with Lucretius himself as comparatively a kid goat and swallow, respectively) at 3.6–13. On the significance of these comparisons for Lucretius' depiction of his relationship with Epicurus, cf. Sedley (1998a: 58, 140–1). On poets' self-representation as birds, the Alexandrians are a point of comparison.

106 This Epicurean doctrine is known as the Cradle Argument, since all creatures do this from birth without having been taught. On pleasure as the guide of life (*dux vitae*), cf. *DRN* 2.172 and, on pleasure and pain as the basis of choice and avoidance, esp. 4.684–6, Diogenes Laertius, *Lives of Eminent Philosophers* 10.34. On the Cradle Argument more generally, see Cicero, *On Ends* 1.29–30, Diogenes Laertius, *Lives of Eminent Philosophers* 10.137, Brunschwig (1986), Dierauer (1977: 194), Sedley (1998b), and Warren (2002: 129–42).

107 Smooth bodies in the honey lead to its generally sweet taste (*DRN* 4.664–72; cf. 4.649–62).

Part III
Philology and sound

9
Gods and vowels

Joshua T. Katz

Oh my – gods and vowels! What do they have in common? Are gods supposed to have vowels, use vowels, perhaps even be vowels? What would this even mean? From the narrow perspective of English, the idea is on the face of it absurd: the very word *god* is, after all, a not especially resonant monosyllable consisting of three sounds and three letters, only one of them a vowel. When one moves into Romance territory, however, things start to look a bit more promising: two or three of the letters in Spanish *dios* and French *dieu* are vowels. Why the relative sonority of these words would be of interest is not immediately clear. But if it is normal for classicists to channel Aratus and proclaim, Ἐκ Διὸς ἀρχώμεσθα ("From Zeus let us begin"), it is also the case that to *dios* I shall return.

My aim in this chapter is to suggest some ways in which it makes sense to pay more heed than we usually do to the literal sound structure of the divine universe – and, indeed, to its literal literal sound structure, for I wish to think about letters as they appear on the page as well as about sounds as they fly through the air. My investigations will take us across the globe and from banal observations to claims that may well seem outlandish. But I believe that the overall picture is interesting and, for that matter, representative of a certain kind of reality.[1]

"From alpha to omega" and related ideas

The phrase "from alpha to omega" is well known, as is its origin in God's and Jesus's self-description in the Book of Revelation as ἐγώ εἰμι τὸ Α καὶ τὸ Ω ("I am Alpha and Omega", Rev. 1:8). Although I cannot comment on the status of

this phrase in the manuscripts or on the theological implications of its application to both Father and Son, three points are worth making. Two of them are obvious: first, God is eternal, being both the beginning and the end; and secondly, God's beginning is a vowel and His end is also a vowel. Does this mean that there is something generally special about vowels? This question brings me to the third point: omega (Ω) is an addition to the standard (twenty-four-letter, Ionic) alphabet, well established by the time BCE turns to CE but decidedly not a timeless part of the representation of Greek, and so we have to ask ourselves what was before "from alpha to omega" when there was not yet an omega. Inside the history of Greek, the final letter of what has since Adolf Kirchhoff been called the "green" alphabet – the most archaic form, associated principally with Crete and lacking the so-called supplementals (Φ, X, Ψ, Ω) – is likewise a vowel: upsilon (Y). The precise history of upsilon, including its placement at the end of the alphabet, is not of concern here;[2] what does have to be recognized, though, is that all Hellenic traditions place this letter immediately after the consonant tau (T), which – if we leave the history of alphabetic Greek – was borrowed more or less directly from the final letter in the Phoenician alphabet, tāw. This corresponds to the final letter in another Semitic system, Hebrew, which explains why the Hebrew analogue of "from A to Ω" is more like our "from A to Z", namely "from aleph (א) to taw (ת)."[3]

So, alphabets are not forever – and, thoroughly unsurprisingly, not all alphabets at all times both begin and end with a vowel. Nonetheless, there are lessons just below the surface for anyone interested in gods and vowels. First, midrash (i.e. Biblical exegesis in Hebrew) makes much of the fact that the Hebrew word for "truth", אמת *emet*, is composed of the first, middle and last letters of the alphabet: aleph, mem, taw.[4] Without earning the scorn of my readers by diving headfirst into kabbalism and reporting in detail what people of a certain mindset have said about this,[5] I nonetheless remind classicists of the concept of the *sphragis* and note that some have called truth "God's seal" since aleph, mem and taw are respectively the last letters of each of the last three words of the account of the creation in Genesis: בָּרָא אֱלֹהִים לַעֲשׂוֹת *bara Elohim laʿasot* ("[And God blessed the seventh day, and sanctified it: because that in it he had rested from all his work which] God created and made", Gen. 2:3 KJV).[6] Furthermore, according to one version of the story of the golem (in Jewish folklore, a Frankenstein-like being made from mud), the word אמת *emet* was written on the anthropomorphic creature's forehead and he could be deactivated, as it were, only by erasing the first letter, which made him מת *met* "dead". Not incidentally, this first letter is none other than the universe's prime mover of an aleph, which also plays a prominent role in the First Commandment ("I am the LORD thy God …", Ex. 20:2 and Dt. 5:6): it is the

first letter of the first word, אנכי *anokhi* "I", which of course refers to God; the would-be first letter of the second word, God's name, which is pronounced with an initial [a], *Adonai*, although it is written entirely differently, as יהוה *YHWH* (see below); and the first letter of the third word, אלהיך *eloheykha* "your God".[7]

I would not be the last person to contradict anyone who believes that interpretations such as these are crazy. I do, however, dispute that they are insignificant and unworthy of scholarly attention. My point in going through just a bit of this kind of procedure – a procedure that may seem playful but can be a matter of deadly seriousness – is that people the world over (not just believers in the "Bible code") do often think associatively, taking facts about the world, or about language, and jerry-building a system so that these facts seem to make more sense.[8] Even if the divine universe is not in fact composed of sounds (whatever that would even mean; see below), it is still perfectly possible for people to tell just-so stories so that from one or the other perspective it appears to be composed of sounds or letters anyway.[9] And in this chapter I am interested in both reality and perception.

The order of the Latin alphabet (A, B, C) goes back, more or less, to the order of the Greek alphabet (A, B, Γ); which goes back, more or less, to the order of the Phoenician alphabet (cf. Hebrew א, ב, ג); which goes back, more or less, to Proto-Sinaitic times and, by the acrophonic principle, early representations of an ox (*'alpu*), a house (*bētu*), etc. This abecedarian order is probably a matter of serendipity; one might call it rather disorder. If millennia ago there was any logic behind the fact that the list is headed by "A is for *'alpu* 'ox' ", it is hard to imagine a good reason why this should ever have been directly followed by "B is for *bētu* 'house' ", which is entirely different in sound, shape and sense.[10]

In India, however, the situation is different, and explaining how will bring me back to "alpha to omega" – or, rather, "alpha to upsilon".[11] Almost all Indic languages are written in a family of alphasyllabic scripts known as *nāgarī*, whose oldest representative, conventionally used for printed Sanskrit today, is Devanāgarī ("divine *nāgarī*"), in which the order of the signs reflects a certain order of pronunciation, which in turn somehow reflects the orderly – one might say "cosmetic" (cf. Greek *kosmos*, "order; ornament; universe") – makeup of the universe.[12] Whatever the origin of these signs may be, their traditional order in the *varṇamālā* (literally "garland of letters") is linguistically elegant and easy to understand: they are arranged phonetically, with the "simple" vowels coming first, then the diphthongs and finally the many consonants, in each case according to certain principles, among them that the progression inside a given subcategory moves from the back of the mouth to the front.[13] The canonical sequence of the sounds of Sanskrit from *a* to *h* runs, then, as follows:

- Simple vowels: *a*, *ā*, *i*, *ī*, *u*, *ū*[, *ṛ̥*, *ṛ*, *ḷ̥*, *ḷ*][14]
- Diphthongs: *e*, *ai*, *o*, *au*[15]
- Consonants: *k*, *kh*, *g*, *gh*, *ṅ*, *c*, *ch*, *j*, *jh*, *ñ*, *ṭ*, *ṭh*, *ḍ*, *ḍh*, *ṇ*, … *ś*, *ṣ*, *s*, *h*

With this background, we can return to gods and vowels, for certainly one of the best-known Sanskrit words worldwide is the sacred syllable *om* (sometimes *oṃ*, with an *anusvāra* nasal, and perhaps most properly *óm̆m* with *anunāsika*[16]), whose mystical resonance is prominent in Buddhism and Jainism, as well as being of fundamental importance to Hindus. Among other occasions, this syllable – whose older and in some traditions still standard form contains a diphthong, *aum* (see n. 15 above) – is intoned at the start and finish of any reading of the Vedas and before the recitation of any given mantra.[17] As with the Hebrew material, there is a vast exegetical literature, and thousands upon thousands of accounts exist of the origin, pronunciation, use and religious and philosophical significance of *om* in dime-store self-help books, in hippie literature and all over the Web.[18]

For the immediate purposes, I confine myself to pointing out that *om* – the whole world in a syllable, as it were – presents a very neatly arranged orthographic, phonetic and cosmological package. It is orthographically interesting in having its very own, widely recognized symbol:

It is phonetically interesting in being the only word in Sanskrit that is characteristically written with *pluti*, an indication that it is to be pronounced overlong, specifically with three morae rather than two (hence sometimes written *o3m* or *a3um*).[19] And it is noteworthy, too, for being composed of the long (often overlong) diphthong that is made by adding to the language's *first* vowel (*a*: formed in the back of the mouth, without rounding) the *last* of its fundamental vowels (*u*[20]: also formed in the back of the mouth, but with rounding of the lips all the way at the front) – plus the sound of the literally hovering *candrabindu*, a diacritical mark (̐) that means "moon-dot" and indicates an open-mouthed and highly resonant nasalization of the preceding vowel, so minimal and "unconsonantal" a consonantal sound that there is not even a proper syllabic character for it in the writing system.[21] The result is like an extended huuummm (or "hũũũ"),[22] and since the English word *hum* is "echoic" (thus *OED* s.v.), I make the comparison seriously. But *om* – for which a technical term in Sanskrit is *práṇava-*, a derivative of *pra-ṇu-* "roar, bellow; hum" – is a hum that has cosmological import and is anything but random: a prime example of "sonic theology",[23] it is, in essence, the universe's echo.[24]

Divine vowels

There is thus a harmonic quality to the sacred syllable *om*, and if we consider the nature of vowels – which we shall do now in order then to make our way back to gods – it will become apparent why this is so, for vowels (the Greek term is *phōnēenta*/*phōnounta*, i.e. "things filled with sound") are in effect the free air that defines a language's syllabic structure.[25] They are primary, uttered with an open vocal tract, whereas consonants (Greek *aphōna*, i.e. "un-sounds") involve the full or partial constriction of the tract and are literally *consonantes*, things "sounding with" other things, namely of course the primary, "phonated", syllable-building vowels. In a brilliant article published sixty years ago, the Indologist J. A. B. van Buitenen noted that the Sanskrit grammatical term for "syllable", *akṣára-*, which literally means "undying" or "imperishable", is also the word for "first cause, source of creation", a meaning it has at least in part thanks to its strong association with *om*.[26] The reason is clear but worth keeping well in mind: this is a syllable – basically a long, long resonant vowel – that has such tremendous power that it is truly the origin of the world as well as of the word.

The intimate connection between word and world is well known also to classicists and historians of Western ideas. According to early atomic theory and, then, Epicureanism, the universe is made of atoms (Greek *atoma*, i.e. "uncuttable things") and there are correspondences between the atoms of tangible, physical objects and those of language. The most famous account of Epicurean atomism is the Roman poet-*cum*-philosopher Lucretius' *On the Nature of Things*,[27] in which atoms are sometimes called *rerum primordia* "beginnings of things" and other times *elementa*, a word that (like Greek *stoicheia*) also has the significant meaning "letters (of the alphabet)" and one whose etymology I am inclined to believe is the central alphabetical sequence *LMN*.[28] But there are other ways, too, in which word and world are and come to be linked. In "book religions", for example, in which (unlike in the Epicurean world of random chance) the integrity of scripture matters more than its sound structure, we find the widespread conceit of the universe as the ultimate text (cf. Latin *textum* "woven fabric"); and by the time of Late Antiquity, the massively influential idea of the "Book of Nature" has been formalized, according to which the universe is an open book, a literal woven text comprising letters and words.[29] Finally, it is important in this context to mention the "Harmony/Music of the Spheres" (*musica universalis*), the metaphysical doctrine, associated above all with the sixth-century BCE thinker Pythagoras but in some respects probably older, by which the cosmos "hums" along in accordance with precise musical, mathematical and also linguistic – especially vocalic – principles and proportions.[30]

If vowels are first causes as well as ubiquitous, one might think that they would provide a phonetically easy means to celebrate God/gods and His/their works. As we shall see, this is indeed often the case. But first I would like to take a quick trip through two Semitic issues with speaking of the divine, one in Hebrew and another in Arabic. To begin, the true name of the Hebrew God is culturally unpronounceable: as noted briefly above, the Tetragrammaton, *YHWH* (i.e. *Yahweh*), which is sometimes rendered in English as the vowel-less and hence ineffable sequence *G-d*, is pronounced entirely differently, with the substitute word *Adonai*. This, however, is a matter of taboo avoidance, which is interesting, to be sure, but not an indication of some inherent peculiarity of the sounds that the letters yod, he and waw represent. A more substantial, and to my mind fascinating, matter arises in Arabic: the name *Allah*, pronounced [ʔalˤlˤaː] and having as its base *-lˤlˤah-*, seems to be the only native form to have a certain sound phonemically, the so-called emphatic *l* (*ḷ* or [lˤ]).[31] Saying *Allah*, therefore, is not hiding God's name (as with *YHWH*), but the very act of speech does mark it as unusual.

In the rest of this chapter, I shall consider the linguistic nature of easy-to-pronounce gods, ones with vowels. Indeed, in some cases too many vowels. The most spectacular instance of hypervocalism is a matter dear to my heart: Cicero's youthful translation of Aratus' incipit, Ἐκ Διὸς ἀρχώμεσθα ("From Zeus let us begin", *Phaenomena* 1), as *A Ioue Musarum primordia* ("From Jove [is my] Muses' [i.e. song's] beginning", *Aratea fr.* 1). I give little space over to this here, though, for the essential ideas are already in print and I intend to publish a full (and bibliographically responsible) account elsewhere.[32] But in brief, these four words are fascinating: *A Ioue* runs the vocalic gamut, beginning with the conventional first letter of the alphabet; as we have seen, *primordia* hints at "letters" as well as meaning "beginning(s), first cause(s)"; and *Musarum* is a phonetically balanced near-palindrome (note its proximate preform: **Musasum*). All of this could just be fun and games, but there are in fact considerable depths behind the observation that *A Ioue* is the most compact possible way of putting all and only the five vowels together in Latin[33] – or, rather, one of a very few most compact possible ways.[34]

At least four approaches to thinking about the world are at play here, two of which are especially relevant to the points I am leading up to about gods and vowels in Archaic Greek poetry. First, there is the magical and religious dimension. Strings of vowels in *voces magicae* are employed in divine invocations throughout the wider Mediterranean world, as in the near-palindrome ιεο υηω· ιαη αϊ ηωυ οει (*Papyri Graecae Magicae* IV.1130–1). Furthermore, the most common divine name in the Greco-Egyptian magical papyri is none other than ΙΑΩ – which happens to be a translation of the ineffable Hebrew name of G-d (see above) by just the first, middle and last of

the seven Greek vowels.[35] And secondly, there is the philosophical dimension, on which I have already commented: Cicero was no Epicurean, but the conceit is widespread across languages and cultures that sounds and letters, particularly the primordial vowels, are integral to the universe's elemental song, providing the drone and often also the melody.

Let us return to Greek, and to Zeus, the declension of whose name is unparalleled in the language: nom. Ζεύς, gen. Διός, etc. The alternation Ζ- ~ Δ- gets a lot of attention in elementary classes in historical and comparative linguistics, but it is of course entirely understood. What has not received any attention – indeed, I do not believe that it has been noticed – is the fact that the paradigm runs the vocalic gamut (*-EU- ~ -I(U)O- ~ -I(U)I- ~ -I(U)A- ~ -EU*):[36]

- nom. Ζεύς
- gen. Δι(ϝ)ός
- dat. Δι(ϝ)ί (older Δι(ϝ)ει(-); cf. Mycenaean *di-we*)
- acc. Δί(ϝ)α (older Ζῆν, recharacterized as Ζῆνα)[37]
- voc. Ζεῦ

True, the Greek alphabet, in its Ionic form, has seven (simple) vowels rather than five, and they stand for ten sounds (long and short). But I do not believe that I am cheating by stressing quality over quantity: since, for any *x*, $V\breve{}x$ differs from $V\bar{}x$ only in quantity and since such differences do not seem to be very important, being at best inconsistently represented in Greek orthography over the centuries, what seems to be at issue is in the first place quality. Fundamentally, then, Greek has the same vowels that we find in Latin and that are instantiated in *A Ioue*, namely *a*, *e*, *i*, *o* and *u*.

What about the Proto-Indo-European paradigm that leads to the declension of Ζεύς – and, in ways that need not concern us here, to Spanish *dios*, French *dieu* and Latin *Ioue*? This is a pretty extraordinary paradigm, too, and a likewise uncontroversial one:

- nom. **d(i)i̯éus*
- gen. **diu̯é/ós*
- dat. **diu̯éi*
- acc. **di̯ḗm* < ***d(i)i̯éum*
- voc. **d(i)i̯éu*

It is immediately apparent that all the vowels are present here as well – aside from **a*.

Fortunately, there is no need to worry about the lack of **a* in the declension of **d(i)i̯éus*. The inventory of vowels in the proto-language is straightforward –

a*, **ā*, **e*, **ē*, **i*, (ī*), **o*, **ō*, **u*, (**ū*) (plus diphthongs: **ai*, **ei*, **oi*, **au*, **eu*, **ou*) – but as Michael Weiss neatly puts it, "All vowels in Proto-Indo-European were not equal".[38] The **e*'s (i.e. **e* and **ē*) and **o*'s (i.e. **o* and **ō*) pattern together, according to the principles of ablaut, and are to a large extent predictable outcomes of one underlying vowel; **i* and **u* pattern with their consonantal variants, the semivowels **i̯* (**j*) and **u̯* (**w*), as well as taking part in ablaut via the diphthongs (for their part, **ī* and **ū* may not even be reconstructible[39]); and this leaves the **a*'s (**a* and the even rarer **ā*), which have the lowest functional load among the Proto-Indo-European vowels and do not as a rule pattern with the others. Proto-Indo-European **a/ā* is thus a bit like emphatic *l* in Arabic – except that the latter sound marks Allah's specialness, whereas the former is special in quite another way, having a "notable tendency" to appear in "words denoting physical deformities … e.g. Lat. *calvus* 'bald', Lat. *caecus* 'blind', etc.".[40]

The Archaic Greek universe of sound

It is time to talk about how the universe of sound manifests itself in our earliest Greek texts, especially hymns. I begin with the proem of Hesiod's *Works & Days*, conventionally dated to the eighth or seventh century:[41]

> *Μοῦσαι* Πιερίηθεν, *ἀοιδῇσι* κλείουσαι,
> δεῦτε, **Δί**' ἐννέπετε, σφέτερον πατέρ' ὑμνείουσαι,
> ὅν τε διὰ βροτοὶ ἄνδρες ὁμῶς ἄφατοί τε φατοί τε
> ῥητοί τ' ἄρρητοί τε **Διὸς** μεγάλοιο ἕκητι.
> ῥέα μὲν γὰρ βριάει, ῥέα δὲ βριάοντα χαλέπτει,
> ῥεῖα δ' ἀρίζηλον μινύθει καὶ ἄδηλον ἀέξει,
> ῥεῖα δέ τ' ἰθύνει σκολιὸν καὶ ἀγήνορα κάρφει
> **Ζεὺς** ὑψιβρεμέτης ὃς ὑπέρτατα δώματα ναίει.
> κλῦθι ἰδὼν ἀιών τε, δίκῃ δ' ἴθυνε θέμιστας
> τύνη· ἐγὼ δέ κε Πέρσῃ ἐτήτυμα μυθησαί*μην*.
>
> *Muses* from Pieria, who glorify *by songs*,
> come to me, tell of **Zeus** your father in your singing.
> Because of him mortal men are unmentioned and mentioned,
> spoken and unspoken of, according to great **Zeus**' will.
> For easily he makes strong, and easily he oppresses the strong,
> easily he diminishes the conspicuous one and magnifies the inconspicuous,
> and easily he makes the crooked straight and withers the proud –
> **Zeus** who thunders on high, who dwells in the highest mansions.
> O hearken as thou seest and hearest, and make judgment straight with righteousness,
> Lord; while *I should like* to tell Perses words of truth. (1–10)

As M. L. West puts it in his commentary, the ten "lines are rather stylized, marked by anaphora (5–7), chiasmus (3–4, 7), a balancing of phrases which

results in rhyme (1–2, 5–8), and perhaps *figura etymologica* in 2–3".[42] More specifically, I count at least the following among the striking – and overlapping – stylistic features: homoeoteleuton (-αι [1, 1, 2], -τοι [3, 3, 3, 4, 4], -ει [5, 5, 6, 6, 7, 7, 8, including all verse-final syllables: so, rhyme]); anaphora (verse-initial [and -medial] ῥέα˘/ῥεῖα, with preceding verse-initial ῥη- [4, 5, 5, 6, 7]); striking consonantism ((-)ρ*V*- [4, 4, 5, 5, 5, 5, 6, 6, 7, 8]); positive–negative pairs (3, 4) plus chiasmus (also 7); and unusual play with form (ῥέα versus ῥεῖα [5, 5, 6, 7]) and function (stative βριάει versus factitive βριάοντα [5, 5]).[43]

What interests me here are those stylistic features that have specifically to do with Zeus, beginning with the polyptoton of his name (highlighted in boldface in the passage above): accusative Δί(α) in verse 2, genitive Διός in 4 and verse-initial nominative #Ζεύς,[44] as a reminder of sorts, in 8; we are praising him in all his aspects, or at least most of them. There are further features, too (highlighted with underlining). For one thing, the preposition διά in verse 3 is a probable etymological play on Δί(α), in exactly the same metrical position in the previous verse.[45] For another, this Δί(α) is immediately preceded by the adverb #δεῦτε "hither", whose first syllable, #δεῦ-, is in effect a folk-etymological vocative to go with the upcoming nominative #Ζεύς.[46] And then there is the positive–negative pair ἀρίζηλον – ἄδηλον in verse 6: although these words probably do not actually share Zeus' Indo-European root,[47] it is surely clear, in context, that what Hesiod is doing is throwing in yet one more folk-etymological association in order to amplify further the name, aspects and (yes) vowels of the highest god.[48]

So what *is* the root of Ζεύς – or, in Proto-Indo-European terms, **d(i)i̯éus*? It is generally reckoned to be **di̯eu-* "sky(god), day; shine",[49] and what I propose to do now is engage in some pointed kabbalism. This root has all the vowels, or all the vowels that matter, at any rate: **e* (which alternates with **o* more or less predictably), **i* and **u*. If you turn it around, you get **u̯eid-* "see" (cf. e.g. Greek (ϝ)ἰδ-, as well as (ϝ)οἰδ- "know"), about which I do not have space to comment here (though see n. 55 below); and if you add to this a consonant – the second and, from the point of view of Greek, helpfully *a*-colouring laryngeal[50] – then you end up with **h₂u̯eid-* "sing", as in Greek ἀ(ϝ)είδω and related forms.[51]

As it turns out, these forms are critical and vocalically elemental building blocks of our earliest Greek poetry. With the digamma included, the verb ἀϝείδω and the noun ἀϝοιδή "song" each manifest the five qualities of vowel in just six letters. Some readers will accuse me of overemphasizing the digamma, and they would not be wrong: it is not a matter of dispute that [w] was no longer pronounced as such in Ionic by the time Homer and Hesiod were first written down and that what remains is a shadowy, but very real, prosodic effect, one that might have been felt especially at the incipits of traditional (i.e. inherited) poetry.[52] Note, though, that accepting this is not terribly important,

for the vocalic range of ἀείδω and ἀοιδή is remarkable even without taking the digamma into account.

Whatever the deep relationship may be between chance and choice (at what level is form responsible for content?), the vowels of ἀϝοιδή, and not just the word's meaning, help give power to the opening of Hesiod's *Works & Days* (1):

> ##Μοῦσαι Πιερίηθεν, ἀϝοιδῇσι ("Muses from Pieria, by songs ...").

But such power is by no means confined to this work alone. Consider also the openings of Hesiod's *Theogony* (1) and Homer's *Iliad* (1.1), two of the remaining three earliest Greek poetic texts we possess:

> ##Μουσάων Ἑλικωνιάδων ἀρχώμεθ' ἀϝείδειν ("From the Heliconian Muses let us begin to sing")

and

> ##Μῆνιν ἄϝειδε, θεά ("Of the wrath sing, o goddess").

As for the last text, Homer's *Odyssey*, it begins (1),

> ##Ἄνδρα μοι ἔννεπε, Μοῦσα ("Of the man sing to me, o Muse"),

with the imperative ἔννεπε instead of a form of ἀϝε/οιδ-, a variation whose importance seems especially small when one notes that the imperative ἐννέπετε appears in the second verse of Hesiod's *Works & Days*, immediately after ἀοιδῇσι .../δεῦτε, Δί'.

In any case, a remarkable, but hitherto seemingly unseen, point is that if we accept a couple of etymologies of Calvert Watkins, as many scholars do, then all four of the earliest epic incipits display – and as the very first word in three of them – a form that goes back to Proto-Indo-European **men-* "think": Μοῦσα ("Muse" < **mon-tu-h2* [*vel sim.*]) and μῆνις ("wrath", deformed from *μνᾶνις < **mneh2-ni-*, whose root, **mneh2-* "keep in mind" [see n. 55 below], as in Greek μνάομαι "am mindful of, remember", is generally considered an extension of **men-*).[53] Just like **h2u̯eid-*, **men-* is a poetic and religious root in meaning (cf. e.g. Sanskrit *mántra-*, whose deep sense is presumably something like "instrument of thought") and also an especially phonetically resonant one, containing as it does two of the most vowel-like consonants;[54] and as has often been pointed out, singing and mental activity (including committing information to memory) were the two most important activities of the Proto-Indo-European poet.[55]

It is for these reasons that in the text of the proem of the *Works & Days* given above, I highlight in italics ##Μοῦσαι and ἀοιδῇσι. But there is even

more to say about this simultaneously mental and elemental song, which is highlighted by the ring from the first word, ##Μοῦσαι, to the last, μυθησαίμην#, a verbal form meaning "I would speak/sing" that provides both a folk etymology for the Muses in its root-*cum*-verbal suffix, μυθησαι-, and a new and playful instance of -μην# (as though related to **men-*, and so italicized as well) in the desinence. Furthermore, the phonetic play here goes well beyond the ending, as Watkins has illuminatingly described:[56]

> The closure of this 10-line proem is effected with no less art. The message is simply 'to Perses' … 'I would speak true things': ἐτήτυμα μυθησαίμην. The simple message is in fact *the poet's truth*, and it is cunningly hidden and cunningly unveiled. The poet's truth sees in two directions at once, forward and back;
>
> etĒTUMA MUTHĒsaimēn
>
> is an iconic palindrome of the elements of TRUE and SPEAK. This phonetic inversion finally calls attention to – perceptually cues – the hidden phonetic and semantic ring which frames the entire proem. The first word is Μοῦσαι, the Muses, the personified mind of the poet… . And the last word of the proem contains a Saussurian hypogram of the same word, to form a ring:
>
> MOUSAI ––– MUthēSAImēn.
>
> The Muses – collectively the mind of the poet – are thus literally embodied in the poet's first person singular verb μυθησαίμην … 'I would speak'.

Such large-scale mental and elemental rings, besides being found in this ten-verse hymnic proem, also provide the structure for entire *Homeric Hymns*, some of which – including three of the four major ones – both begin and end with forms of **men-/ mneh₂-* and/or **h₂u̯eid-*:[57]

- *Demeter* (*Hymn* 2): ἀ(ϝ)είδειν# ("[I begin] to sing", 1) – μνήσομ' ἀ(ϝ)οιδῆς## ("I shall remember a song", 495);
- *Apollo* (*Hymn* 3): ##Μνήσομαι ("Let me remember", 1) – μνήσομ' ἀ(ϝ)οιδῆς## (546);

and

- *Hermes* (*Hymn* 4): ##Ἑρμῆν ὕμνει, Μοῦσα ("Of Hermes sing, o Muse", 1) – μνήσομ' ἀ(ϝ)οιδῆς## (580).[58]

Since A's and M's abound at the start and finish of our earliest hexametric hymns,[59] I suggest that ##Μῆνιν ἄϝειδε and formulaic μνήσομ' ἀ(ϝ)οιδῆς## are the Greek analogues of *om*: not etymologically, of course, but both functionally (they open and conclude mantras) and also phonetically, containing in very little space the whole vocalic universe[60] and the nasal hum.[61] In addition, the

occasional scansion of the first vowel of ἀ(ϝ)είδω as long (ᾱ) – in Archaic poetry, usually in the first-person singular form and when it is the second word in a hymnic proem after the initial accusative of the divine being(s) (or, in one case, place) being hymned – seems to me plausibly the Greek analogue of *pluti*: ##Ἥρην ἀ(ϝ)είδω ("Of Hera I siiing", *Hymn* 12.1), ##Ἑρμῆν ἀ(ϝ)είδω ("Of Hermes I siiing", *Hymn* 18.1), ##Ἄρτεμιν ἀ(ϝ)είδω ("Of Artemis I siiing", *Hymn* 27.1), ##Ἴλιον ἀ(ϝ)είδω ("Of Troy I siiing", *Ilias parva*) and especially ##Μούσας ἀ(ϝ)είδω ("Of the Muses I siiing"), which is how Apellicon's text of the *Iliad* begins.[62] It is obviously too great a leap to say that the incipit of the *Iliad* conceals something like *##Μ(ν)ῆνιν ἄ'ϝείδω, Ζεῦ or *##Ζῆν ᾱ'ϝείδω, Μοῦσα(ι), but one may wonder whether a poetic and religious formula with all the vowels (quasi-**di̯eu-* + **h2u̯eid-*) and both the nasals (**men-*) lurks in epic's lyric background – and perhaps even at the so-called second beginning of Vergil's *Aeneid*.[63]

A plausible next step would be to return to the Vedic material, starting with *Rigveda* 1.1. What has since ancient times been the first hymn of the collection (though it does not belong linguistically to the oldest stratum) begins with the vowel *a*, in the name of the fire-god *agní-*, whose paradigm is then given polyptotically: acc. ##*Agním* (1a), nom. #*agníḥ* (2a), instr. #*agnínā* (3a), voc. #*ágne* (4a), nom. #*agnír* (5a).[64] I leave Indological considerations for another occasion, however, and close instead on a Western note of inspiration. The Greek noun αὐδή "(human) voice" is often said to go back to the same root as ἀ(ϝ)είδω. This is probably incorrect: αὐδή seems to descend from Proto-Indo-European **h2u̯ed(H)-* "speak" and be cognate with Sanskrit *vad-*.[65] Nevertheless, the two words certainly are connected from the inner perspective of Greek,[66] as in Hesiod's *Dichterweihe* at the start of the *Theogony*, in which Hesiod describes the literally inspiring breath of the Muses with the remarkable collocation αὐδὴν [*v.l.* ἀοιδήν[67]]/θέσπιν ("divine voice", 31–2). Note that αὐδήν# is echoed three verses later by αἰϝὲν ἀϝείδειν# (and with another pair, ἐόντα# and αἰϝὲν ἐόντων# "(always) being", in between)[68]:

ἐνέπνευσαν δέ μοι *αὐδὴν*
θέσπιν, ἵνα κλείοιμι τά τ' ἐσσόμενα πρό τ' ἐόντα,
καί μ' ἐκέλονθ' ὑμνεῖν μακάρων γένος αἰὲν ἐόντων,
σφᾶς δ' αὐτὰς πρῶτόν τε καὶ ὕστατον αἰὲν *ἀείδειν*.

and they breathed into me wondrous
voice, so that I should celebrate things of the future and things that were aforetime.
And they told me to sing of the family of blessed ones who are for ever,
and first and last always *to sing* of themselves. (31–4)

In the best account of αὐδὴν/θέσπιν, Andrew Ford translates it as "unwearying voice, unbreakable sound", writing that the "idea [is] of poetry as

a sublime voicing".[69] Now, as it happens, Hesiod himself, near the start of the *Works & Days*, makes a delightful metapoetic comment about inspired ἀοιδοί and vowels:[70]

> καὶ κεραμεὺς κεραμεῖ κοτέει καὶ τέκτονι τέκτων,
> καὶ πτωχὸς πτωχῷ φθονέει καὶ *ἀοιδὸς ἀοιδῷ*.
>
> So potter is piqued with potter, joiner with joiner,
> beggar begrudges beggar, and *singer singer*. (25–6)

Commenting on the striking "indexical linking by phonetic figure in [this] proverb", Watkins concludes, "The many vowels of the poet (ἀοιδός) beside the harsh stop consonants of the others is iconic to his special and privileged status."[71] And so – building on the account of the *Dichterweihe* that Katharina Volk and I published quite some years ago[72] – I suggest that since the Muses ἐνέπνευσαν ("breathed [divine voice] into", *Theogony* 31) Hesiod[73] *and* since breath equals vowels *and* since vowels are divine[74] *and* since αὐδὴν/θέσπιν is at some level a replacement of inherited **di̯eu-* + **h₂u̯eid-* (i.e. "divine song"), what Hesiod has acquired from the mental Muses is truly elemental[75]: the "sublime voicing", the "unwearying voice", the "unbreakable sound"[76] that is the Greek equivalent of the "imperishable, undying" sacred syllable in Sanskrit, *om*.[77]

1 In the few years since the initial publication of this paper (Katz 2013a; see n. 77 below) there has been an explosion in work on Greek and Latin soundscapes, with pride of place going to Butler (2015) and Gurd (2016); see also Lachenaud (2013). Stephanie Frampton (forthcoming) has many interesting things to say about the role of the alphabet in Roman literature and thought.

2 Upsilon, which is the predecessor of our letter U, is generally considered the twin of digamma (F), an early Greek letter pronounced [w] that has come down to us as the letter F; the usual line is that both derive from Phoenician wāw, the sixth letter of that alphabet (cf. Hebrew waw [ו]).

3 The best single source for information about the diachronic development and synchronic reality of all the alphabetical systems mentioned in this chapter (and many, many others besides) is Daniels and Bright (1996).

4 There are twenty-two letters in the Hebrew alphabet by the conventional reckoning, but if one counts final variants separately, then there are twenty-seven, with non-final mem (מ) occupying position fourteen.

5 But a few sober citations on the material to follow in this paragraph are called for. The idea that *emet* is God's seal is found e.g. in the creation of the alphabet at the start of the *Zohar* (1:2b; see Matt 2004: 11–16, at 12). On *(e)met* and the golem, see e.g. the basic account of Scholem (1974: 352) and Idel (1990: 64–5, with notes on 76–7, and *passim* [see Subject Index s.v. *'Emet*]). Heller-Roazen (2005: 19–25, with notes on 234–5) offers a poetic account of the mystical status of aleph, including in the Ten Commandments.

6 Greek and Latin examples of the signature-acrostic(/telestich) as *sphragis* are well known: Courtney (1990) provides the standard list, and see the papers by M. B. Sullivan, V. Garulli and R. Mairs in Kwapisz, Petrain, and Szymański (2013), as well as Luz (2010: 1–77, 375–6) and also Katz (2008 and, for a wider perspective, 2009). Katz (2013c: 4–10) summarizes recent work on classical, especially Latin, acrostics and suggests a new one in book 6 of Vergil's *Aeneid*; for the claim that Vergil may have intentionally put an acronymic authorial signature in book 2 of his *Georgics*, see now Katz (2016b).

7 What all the writing systems discussed in the present chapter have in common is that their order, if known, begins with something like "A". Compare Heller-Roazen (2005: 25): "The sole material of divine speech, … [*a*]*leph* guards the place of oblivion at the inception of every alphabet".

8 There is an immense body of literature on the manipulation of signs and symbols in culture after culture for the purposes of both hiding and uncovering – sometimes correctly but in any case often bizarrely – small- and large-scale messages. The classic work remains Dornseiff (1925); Drucker (1995) is eminently readable.

9 This is an extension of folk etymology, which I believe historical and comparative linguists need to take more seriously than they (we) usually do: see Katz (2010b, 2016a, also 2010a).

10 Driver (1976: 179–85, 269–73) offers the classic account of alphabetical order, with wry and sceptical observations on "astral or lunar theories" (181) and much else that has been supposed; according to Daniels (2013: 424, n. 37), "Most likely, the letters were simply set down as they came to the mind of the deviser (which could account for [a few] associative sequences …)". Ladefoged (2012: 178) notes an "interesting fact that applies to most languages with five vowels… [, namely] that the order of the letters in the Latin alphabet, a, **e**, **i**, **o**, **u**, is also the order of the frequency of occurrence of these sounds". I am grateful to Peter Daniels for pointing me to a number of articles on the subject of alphabetical order.

11 The authoritative account of Indo-Aryan writing on the Subcontinent is Salomon (1998).

12 Note, though, that no form of *nāgarī* dates back much more than a thousand years (see e.g. Salomon 1998: 40–1) and that we have no knowledge of the order of the signs in Brāhmī, the script from which it descends, which is known from mid-third-century BCE Aśokan inscriptions and for which there seems to be some pre-Mauryan evidence as well. (Brāhmī itself may have arisen out of a Semitic prototype, but this idea is controversial [see Salomon 1998: 19–30 for a balanced discussion] and, even if true, does not appear to be of help in determining the early order of the Indian abugida.) It may be added that Richard Salomon and others have demonstrated that the regular order for the other Indic script, Kharoṣṭhī, follows the "mystical alphabet of the Buddhists", i.e. the Arapacana syllabary, named after the first five characters: *a*, *ra*, *pa*, *ca*, *na* (see above all Salomon 1990, 2004, with further references); since there is some sort of connection between Kharoṣṭhī and Brāhmī, this is obviously of great interest to the matter at hand, but it is unfortunately not clear what the nature of the connection is (see Salomon 1998: 23, 51–4). In addition, the issue is evidently complicated further by the fact that the order of the vowels in the Arapacana is now known to be *a*, *e*, *i*, *o*, *u* (see Salomon 2006: 205–7, 214, 216), whereas in Devanāgarī it is *a*, *i*, *u*, *e*, *o* (see immediately below in the text).

13 Noting that a "property possessed by many writing systems with a limited inventory of signs is a canonical order in which the signs are learned and which becomes an organizing principle for lists of words and for other things as well", Daniels (2001: 71) points out that "[s]uch orders may be arbitrary or motivated; and virtually the only motivated sign-order is

phonetic" (see 80 n. 8 for the exceptions: Japanese and Javanese).

14 I use brackets here to separate the fundamental vowels (see below in the text) from those that are in the first place vocalic reflexes of the consonants *r* and *l*.

15 Note that *e* and *o* are historically short diphthongs: respectively **ai* and **au*. Their correspondents, the synchronic diphthongs *ai* and *au*, were once upon a time *long* diphthongs: **āi* and **āu*.

16 For *óm̐* as "richtig" (Mayrhofer 1992: 280), see Hoffmann (1976: [II.]554, n. 5).

17 I return at the end of the chapter to the etymology of Sanskrit *mántra-* "prayer" and its connection to *om*. Note that *om* itself does not appear in the *Rigveda* (except in the *khila*s).

18 See now Gerety (2015), which is far and away the best account of the origins and early use of *om*, and the excellent summary of some points in Gerety (forthcoming). Gerety cites the original version of the present chapter (Katz 2013a), and since I remain happy enough with my brief comments on *om* there, I have decided against making more than minor revisions to this and the next paragraph in the text in the light of Gerety's research. However, his work is essential reading, as are three particularly important references that I have learned from it: Killingley (1986), Staal (1989: 253–77, esp. 262–3, 274–7) and Wilke and Moebus (2011: 435–56). All stress the sonic qualities of *om*, which Staal goes so far as to call "an 'original' mantra" that "we assume … existed before language was born" (262).

19 Strunk (1983) provides the best overall account of *pluti*, although his discussion of *om* occupies only two pages (34–5): "Besonders auffällig und reich belegt ist [die] ritualsprachliche Pluti für die heilige Silbe *om*. Pāṇini gibt dazu für seine Zeit spezifizierte Regeln mit 8, 2, 87 (*o3m* am Beginn eines heiligen Textes) und 8, 2, 99 (Substitution des letzten Vokals und eines darauf gegebenenfalls folgenden Konsonanten durch *o3m* bei einer Opferhandlung)" (34). On the word's peculiar sandhi, see Hoffmann (1976: [II.]554, n. 5).

20 See n. 14 above. In view of the *pluti*, it does not seem unreasonable to treat *u* and *ū* as the same thing.

21 Compare Agud (2010), a brief account with "intercultural" meditations.

22 Compare, perhaps, the Mahāyāna Buddhist mantra *oṃ maṇipadme hūṃ*, beloved especially of the Dalai Lama and his followers, whose final syllable, *hūṃ*, would seem to be an alternative of sorts to *oṃ* (compare e.g. Parpola 1981: 208–10, with notes on 211). There is, once again, a vast exegetical literature, on which see Studholme (2002). Most of the discussion about the meaning of the mantra – a call to the bodhisattva Avalokiteśvara – has concerned *maṇipadme* (possibly two words: *maṇi padme*), which may or may not have the original sense "O Jeweled-Lotus One" (see the sceptical discussion in Studholme 2002: 105–18, with notes on 189–94). Of interest here are certain comments by Studholme on *oṃ*, *hūṃ* and the overall effect: e.g. "The power of the mantra is said to lie in its sound. The purely sonic or musical dimension of Avalokiteśvara's formula should not, then, go overlooked. Indeed, it is surely not insignificant that the arrangement of the six syllables 'om-ma-ni-pa-dme-hum' does yield a naturally pleasing reverberation when recited. The sounds of the syllables 'om' and 'hum,' at the beginning and end of the formula, tend to merge together into a continuous hum" (109–10) and "Neither [*oṃ* nor *hūṃ*], of course, has any intrinsic semantic meaning. Both are laden, however, with symbolic import… . [I]t cannot be wholly unlikely that the frequent use of these two syllables to begin and end different mantras was originally derived from the same use that is made of the two similar syllables *A-* and *-Haṃ*. *A* is the first letter of the Sanskrit alphabet and *Ha* the last, encompassing all the other letters in between. *A-* and *-Haṃ* together also make up the word *ahaṃ*, meaning 'I.' The use of

those two syllables at either end of a mantra, then, conveys a sense of both the identity and the all-inclusive nature of the mind engaged in mantric utterance" (116–17). Whatever one may think of the details of Studholme's analysis, he is right that sound trumps etymological interpretation in indigenous understanding.

23 On sonic theology (as he calls it) in Hinduism, see Beck (1993).

24 The synchronic and shallow diachronic interpretation of *om* as *a* + *u* + *m* is clear – it is also part of the Indic creation story in *Aitareya Brāhmaṇa* 5.32 (cited in Hock 1991: 107) – but what is its deeper etymology? The two fullest scholarly accounts of the origin and semantic development of *om* come to very different conclusions: Parpola (1981) and Hock (1991). Parpola argues that the sacred syllable is Dravidian in origin (**ākum*, as in Tamil *ām* "yes") and is in the first place a particle of affirmation; this view Hock rejects, in my opinion correctly, but his own belief, which builds especially on work by A. B. Keith from a century ago (see Hock 1991: 89), may not be the whole story either, namely that at least one of the two primary meanings of *om* that he identifies and carefully teases apart – an exclamatory/filler particle and a recitational substitution – derives "from the nasal(ized) lengthening of final vowels in Vedic recitation" (89; see also 106). While Hock is right to stress that there are examples of non-nasalized *om* (i.e. of *o*), where this *o(m)* itself comes from remains an open question. One idea is that it is in origin a particle, like Greek αὖ "again"; another is that it is "originally just a meaningless sound" (see Parpola 1981: 195, with references in 210, n. 5: one of quite a number of prior explanations that Parpola goes through in order to discard). I prefer my account: that it is originally just a sound, but a deeply meaningful one – specifically, a representation of the sonic universe by means of the vocalic gamut from *a* to *u* (with or without the hum). Be that as it may, Hock ends his 1991 paper with "a few brief speculations on the path by which *om* … came to be the Sanskrit sacred syllable par excellence" (107), suggesting that it "lends itself most readily as the ONE akṣara that embodies all that is shared by the three Vedas [i.e. the *Rigveda*, *Yajurveda* and *Sāmaveda*] – and that which transcends them. The fact that it can be analysed into THREE component parts, *a*, *u*, and *m* … , no doubt further supported this 'triune' character of *om*, as did perhaps the fact … that *om* frequently has TRImoric, pluta pronunciation" (109). This is attractive – and not necessarily in conflict with my idea: surely there are multiple etymological and consequential folk-etymological truths in the story of *om* – and whereas it behooves us to work out its prehistory and history in as much detail as possible, it is hardly surprising that a word of this kind should have inspired so many exegetes, ancient and modern, to devise etiologies that have taken on lives of their own. See now Gerety (2015: 19–26, 98–123 and *passim*): paying careful attention to all emic and etic views about *om*, he tries "[i]n [one] respect … to rehabilitate Staal's notion of 'meaninglessness'" (25) and concludes that "scholars have been asking the wrong questions of OM's history. Their quest for a *single* meaning, etymology, and origin based on the liturgical evidence is misguided. The earliest evidence for liturgical OM is multiform; there is no 'original' OM to discover" (121; italics in original).

25 The idea of "vowel-hood" is very hard to define phonetically, relying more on acoustic than articulatory evidence: e.g. the perception of syllabic structure. Nevertheless, "[i]n the production of vowel sounds, the articulators [i.e. lips, teeth, uvula, etc.] do not come very close together, and the passage of the airstream is relatively unobstructed" (Ladefoged and Johnson 2015: 20).

26 See van Buitenen (1959). Hock (1991: 107–9) provides some corrective comments.

27 See Snyder (1980), with prior references, especially to P. Friedländer.

28 For secondary literature on and brief discussion of the derivation of *elementum* from *LMN*, see now Katz (2013c: 12, n. 38).

29 See above all Blumenberg (1983); Volk (2012: 212–15 and *passim*), focusing on the Hellenistic poet Aratus, sorts out many different ways over the centuries in which the cosmos has been said to be readable. There are at least three types of universal fabric – textual, sonic and actual – and it might prove useful to bring together ideas about all of them more carefully than is usually done: in addition to the first two (both considered in the present chapter), there is also the notion that the universe itself (or significant parts of it, such as day and night) is made of tangible cloth (see e.g. Janda 2000: 13, 200–211 and Katz 2000, with prior references; see also Katz 2010b: 30, with 39, n. 26). The classic treatment of metaphorical weaving in ancient Greece and Rome is Scheid and Svenbro (1994); summary accounts may be found in West (2007: 36–8 ["Poesy as Weaving"], 372–4 ["The World Wide Web"]); and see now Hendren (2012) on "woven alliteration" in Lucretius and the highly speculative second half of Woodard (2014), titled *The Textualization of the Greek Alphabet.*

30 On Pythagoreanism and music, on which much of dubious accuracy has been written for a popular audience, see most recently Heller-Roazen (2011). Also largely recommendable are the works of Joscelyn Godwin, by far the most prolific writer on the Harmony of the Spheres and related mystical matters, whose many books bring together scholarship with a great deal of esoterica; in the present context, note especially *The Mystery of the Seven Vowels in Theory and Practice* (Godwin 1991).

31 "Emphatic *l*" thus has a completely different status from "plain *l*" ([l]), which is very common in Arabic. It is often claimed that the former is a sound found only in *Allah*, and although this is not the case, it may nevertheless be that *Allah* (plus many of its allied forms) is the only native word in which /lˤ/ is phonemic, both in Classical Arabic and in most (if not all) modern dialects. The classic discussion remains Ferguson (1956).

32 For almost everything that follows in this and the next paragraph, see already Katz (2009: 79–84); note also Volk (2012: 231–2).

33 Note that I am speaking in the first place about letters rather than sounds: two of the letters in the sequence *A Ioue* – the semivowels *i* and *u* – are acting as consonants rather than as vowels. There is, however, ample evidence for the connection in the mind of Latin speakers between the vocalic and consonantal uses of these semivowels (see e.g. Allen 1978: 37–42, 120).

34 Andrew Hui has brought a remarkable further example to my attention: Dante's discussion of *auieo*, supposedly "I bind words", in *Convivio* 4.6.3–4, where, following the grammarian Hugh of Pisa (Huguccio Pisanus or Uguccione da Pisa), he invokes the verb as one possible source of Italian *autore* (roughly, "author"): e.g. "And whoever looks carefully at [*auieo*] … will see that it openly demonstrates th[e] meaning ["bind words"], because it is made up only of the bonds of words, that is, only of the five vowels, that are the soul and bond of every word, and composed of them in a mobile form that figures the image of a bond" (translation: Ascoli 2008: 75). Because *auieo* is not found in the Classical language and is extremely rare in the Middle Ages as well (and also because a note in this chapter is not the place for a lengthy treatment), I mention here only Vasoli and De Robertis (1988: 581–4) and Ascoli (2008: 67–129 ["Definitions: The Vowels of Authority"], esp. 108–21). I am greatly indebted to Ilaria and Simone Marchesi for their assistance.

35 Note also the fascinating faux-Egyptian "Song of the Vowels" reported by (ps.-)Demetrius in chapter 71 of his (second-century BCE?) treatise *On Style*: "In Egypt when the priests sing

hymns to the gods, they sing the seven vowels in succession, and the sound of these [letters] has such euphony that men listen to it instead of the flute and the lyre" (translation by Innes in Halliwell et al. 1995: 395, with one modification).

36 The comment in n. 33 above about the dual nature of the sounds/letters *i* and *u* in Latin applies *mutatis mutandis* to Greek. In the paradigm of Ζεύς, upsilon and digamma alternate (compare n. 2 above): the latter is of course consonantal, whereas the former – in the diphthong ευ – is vocalic (see Allen 1987: 80).

37 While Δία is an innovation from the Proto-Indo-European point of view, it is already well established in Homer (*Iliad* 1.394+) and Hesiod (cf. e.g. *Works & Days* 2, discussed below in the text).

38 Weiss (2009: 40). It will be immediately clear to any linguist that, like Weiss, I am not an adherent of the "Leiden school", according to which Proto-Indo-European does not have the vowel **a/ā* at all.

39 See Weiss (2009: 40–1 ["if they occurred at all in PIE, [they] were of very limited distribution" (41)], with n. 48), as well as e.g. Mayrhofer (1986: 171), with particular reference to F. Specht.

40 Weiss (2009: 41). It is, however, also the case (as James Clackson wryly points out to me) that most scholars reconstruct the Proto-Indo-European root of Greek ἅζομαι "worship" and ἅγιος "sacred" (as well as Sanskrit *yaj-* "sacrifice, worship" and Avestan *yaz-* and Old Persian *yad-* "worship") as **Hi̯ag´* -"worship", with inherent **a*.

41 The translation, like the translations of all indented multi-verse passages from Hesiod that follow, comes from West (1988), except that I have inserted line breaks into his prose.

42 West (1978: 136).

43 See for most of these West (1978: 136–42) and especially Watkins (1995: 98–101).

44 In what follows, #X means that X is verse-initial; X# means that X is verse-final; ##X means that X comes at the very beginning of a poem; and X## means that X comes at the very end.

45 See the discussion in West (1978: 138–9), as well as Watkins (1995: 99, with n. 4).

46 How this etymological wordplay interacts with homoeoteleuton and rhyme between verses 2 and 8 is worth more detailed comment. Note that #δεῦτε, Δί' (2) is right on top of rhyming #ὅν τε διὰ βροτοί (3), whose τε is wholly different etymologically (also from that of ἐννέπετε [2]); which in turn is right on top of #ῥητοί τ' ἄρρητοί τε (4), which changes the first syllable and picks up on -τοι as well as (-)τε; which is then followed by three more verses of elaborate play on the initial syllable (#)ῥV¯-; before we return to #Ζεύς (8), which I suggest is #δεῦτε's partner and one of the reasons Hesiod uses the adverb at all.

47 West (1978: 140) notes that "Hesiod seems aware that -ζηλον = -δηλον" and suggests, cautiously, that Hesiod may here have "coin[ed ἄδηλον] *ad hoc* for the antithesis"; he does not make a connection to Ζεύς. Some Indo-Europeanists have taken δῆλος, etc. back to the same root as Ζεύς, but this is not likely: e.g. Hawkins (2004: 59–60, with n. 32), in a discussion of ἀρίζηλος, accepts the now-standard line that we have to do with Proto-Indo-European **deih₂-* "flash, gleam".

48 In a forthcoming book, Alex Purves points out, as part of an extended reading of διαστήτην and its preverb δια- in *Iliad* 1.6, that Homer engages in play in the proem of the *Iliad* (1.1–7) that is similar – phonologically if not also thematically – to what we find at the start of the *Works & Days*: Διὸς δ' ἐτελείετο βουλή# "the will of Zeus was accomplished" in verse 5 is in

exactly the same metrical position as διαστήτην ἐρίσαντε# "the two stood divided in conflict" in verse 6, and the adjective δῖος "divine; excellent" (which is in fact etymologically connected to Ζεύς/Διός) is found in verse 7. Not only are the sounds in Διὸς δ' ἐτε- and διαστήτη- nearly identical, but in the sequence διαστήτην ἐρίσαντε/Ἀτρεΐδης, "every letter in each word recurs in at least one of the other words in the set, and more typically in both, provided we pay attention to quality of vowels, not quantity". Purves also suggests that there is an especially high concentration of vowel-initial words at the start of the poem: e.g. seven of the eleven words that make up the first two verses begin with a vowel, at least graphically in a digamma-less alphabet (as for the proem as a whole, if clitics are counted separately, then twenty-one of the forty-four words do).

49 It is common enough to say that **di̯eu-* is a verbal root meaning "shine", but the only examples are in Indo-Iranian and have a dental extension (cf. Sanskrit *dyut-*); compare Martin Kümmel in Rix (2001: 125). I do not believe that Carolin Schneider in Wodtko, Irslinger, and Schneider (2008: 69–81) is right to set up "**dei̯-, di-* 'hell (sein), scheinen' ".

50 Any who accept the idea that the laryngeals are a subsystem of vowels in the proto-language (thus Reynolds, West, and Coleman 2000) will find this move less brazen.

51 Because it is found only in Greek, Kümmel in Rix (2001: 288) sets up the root **h₂u̯eid-* for Proto-Indo-European with a question mark. A good number of scholars in one way or another follow J. Wackernagel in preferring **h₂u̯ed-* (or **h₂u̯edH-*) "speak" (see below, with n. 65), which allows a connection to Sanskrit *vad-* (see e.g. Meier-Brügger 2000, with reference to J. A. Harðarson on 34; Sihler 1995: 56, 86, 499; and the quick review of secondary literature in Maslov 2009: 20, n. 43); this is not phonologically straightforward, however, and I am unconvinced.

52 See e.g. Hackstein (2010: 415), with references. For Hesiod in particular, the classic account is Edwards (1971: 132–9 – specifically on initial digamma, although see 139, n. 53). In what follows, I have chosen, admittedly artificially and not wholly consistently, to write "ϝ" in forms of "sing" when they appear in Homer and Hesiod but "(ϝ)" when they appear in the *Homeric Hymns* and minor Homerica.

53 For μῆνις, see Watkins (1977) and also Muellner (1996: 177–94); few non-obvious etymological ideas are universally accepted (see e.g. Katz 2010b, 2016a: 115–16, with notes on 123), but this one has certainly received wide acclaim. The connection between Μοῦσα and **men-* is a bit more controversial – Maslov (2016: 416–17, 441, n. 95) dusts off an old idea of Wackernagel that the Muses are named after the mountain(s) (cf. e.g. Latin *mons, mont-*) on which they make their homes – but see Watkins (1995: 73, 110–11), whose idea Janda (2010: 277–94) discusses thoroughly and lightly revises in favour of **món-ti-h₂*; compare also West (2007: 33–5 ["Poetry as Recall"]). Assaël (2000 [≈ 2006: 21–52] – thanks to Sandy Hardie for the references) gives a general (and somewhat fuzzy) account of possible etymologies, both "real" and folk; of his many papers on and around the Muses, Hardie (2005) stands out for the excellent account of the folk-etymological connection between the Latin words *mens* "mind" (< **men-*) and *carmen* "song", as well as *Camena* "Muse".

54 These consonants also happen to sit right in the middle of our earliest alphabets; on *LMN*, see above in the text, with n. 28.

55 On the "*function* of the Indo-European poet … to be the custodian and the transmitter of [his] tradition", see Watkins (1995: 68–84 and *passim*); **mneh₂-* is the "lexical expression of this function" (quotations on 68; italics in original). Note also (with e.g. Bartolotta 2002) the semantic connection between the roots **u̯eid-* "see" (see above in the text) and **men-*: for the

latter, Janda (2010: 293–4), comparing the activities of poets, seers and the Muses, refines an idea of O. Carruba and suggests that its original meaning has something to do with (inner) sight (see already Thomas Zehnder on *$mneh_2$- in Rix 2001: 447, n. 1).

56 Watkins (1995: 100–1; italics in original). See also Katz (2013c: 2, with n. 5, 2013d: 182, with n. 59).

57 This does not seem ever to have been pointed out, including in the four substantial commentaries in English that have appeared since 2008. Endlessly remarked on, however, is that the *Hymns* tend to open with a phrase like "I begin to sing" and end most commonly (12×) with the formula αὐτὰρ ἐγὼ καὶ σεῖο [or: ἐγὼν ὑμέων τε] καὶ ἄλλης μνήσομ' ἀοιδῆς, whose meaning – "But I shall remember both you and another song" (*vel sim.*) – is discussed most recently in Vergados (2013: 586). Miller (1986: 11) writes that hymnic μνήσομαι is "formally equivalent to ἀείδω, ἀείσομαι, and the like".

58 Note the ludic etymologizing in the playful *Hymn to Hermes*: -μην -μν- before the "real" reflex of *mon-, with ὕμνει "sing" substituting for ἀ(ϝ)είδει. Something similar lies behind the ring in the fourth major hymn, to *Aphrodite* (*Hymn* 5): ##Μοῦσά μοι ἔννεπε (1) – ὕμνον## (293). For their playfulness, I mention also *Hymns* 9 (##Ἄρτεμιν ὕμνει, Μοῦσα [1] – ἀ(ϝ)είδειν/ … ὕμνον## [8–9]) and 32 (##Μήνην [N.B. "Moon"!] … Μοῦσαι# [1] – #ἀ(ϝ)ίσομαι … ἀ(ϝ)οιδοί/Μουσάων [19–20]).

59 Jenny Strauss Clay points out to me that the especially resonant [a] is a baby's first vowel and an articulatorily maximally contrastive labial stop his or her first consonant: see famously Jakobson (1941: 34, 54–5, 56 ["Der labiale Verschlusslaut in Verbindung mit dem *a*-Laut schafft das Modell der Silbe"] and *passim*). Staal (1989: 274–5), referring to Jakobson, makes the same point about Sanskrit *om*.

60 Compare the fact that Latin poets seem actively to have tried to start their works with the vocalic gamut, as in *Arma uirumque cano* (Vergil, *Aeneid* 1.1) and, with maximal compression, Cicero's *A Ioue* (see Katz 2009: 81–2). Katz (2013c: 20–1, n. 50) offers tentative thoughts on the presence of the same phenomenon in Greek poetry.

61 One may also compare Hebrew אמן *amen* – as indeed Parpola (1981: 204, with notes on 211) does, although for a different reason. For further literature on the comparison, see Gerety (2015: 104, with n. 9).

62 See Katz (2013b, 2018) for these and other examples of what I call the "hymnic long alpha". Compare Wilke and Moebus (2011: 438) on *o(3)m*: there is, in various texts, "great emphasis on 'o.' Vowels that were originally not 'o's turn into 'o's… . And other Vedic texts, too, … are also adapted under certain conditions by arbitrary distortion of the vowels and inorganic nasalization, to the sound of OṂ. For example, the invitation of the calling priest during the morning pressing sounds something like this (translated into an equivalent): '[O] let us both start the soooonging!' " Daniel Heller-Roazen suggests as a quasi-parallel the Arabic practice known as *madd*, by which vowels are made overlong – specifically in Qur'anic recitation.

63 The *Aeneid* starts anew at 7.37, and according to West (2007: 34), *tu uatem, tu, diua, mone* (7.41) "cannot be accounted for from the Greek models, but must come from native Italic tradition". Note the presence of a vowel-filled word for "poet" (here *uatem* "shaman", borrowed from Gaulish) alongside *diua* (ultimately < *$di̯eu$-) and *mone* (< *mon-).

64 The leading reference to the polyptoton here – identified at the start of the twentieth century by Ferdinand de Saussure in his so-called anagram notebooks (on which see Katz 2013d, 2015) – is Elizarenkova (1995: 130, 288 and esp. 153–4, with 301, n. 88); see also Watkins (1995: 22, n. 14 and 112, n. 1). For a disorienting attempt to count and classify the sounds in

Rigveda 1.1, see Raster (1992).

65 Compare n. 51 above. For the reconstruction **h₂u̯edH-*, with a final laryngeal, see e.g. Kümmel in Rix (2001: 286).

66 So are ἀ(ϝ)είδω and the much-discussed word for "nightingale", ἀ(ϝ)ηδών, which probably goes back to **h₂u̯ed(H)-* as well. For an account of the connection between the sweet and complex songs of poets and nightingales in Hesiod and elsewhere in Greek poetry, see Steiner (2007: 178–81 and *passim*).

67 For discussion, see West (1966: 165–6).

68 On αὐδή in general and in Hesiod's *Dichterweihe*, see above all Ford (1992: 172–97 ["Poetry: The Voice of Song"]).

69 Ford (1992: 190).

70 Maslov (2009) provides a speculative but compelling account of the inner-Greek morphological and semantic development of the term ἀοιδός.

71 Watkins (1995: 30, 31). As for the other occupations, Watkins (1995: 30–1) notes that "[t]he first set is alliterative, *k- k- k-*, the second more complex, ***k- t- t- kt- t- kt-***, while the third shows alliteration with variation in the distinctive feature of aspiration: ***pt- pt- pʰtʰ-***" – so the jump to all vowels is especially highly marked. Of τῇ δ' εἶς ᾗ σ' ἂν ἐγώ περ ἄγω καὶ ἀοιδὸν ἐοῦσαν (*Works & Days* 208), spoken by the hawk to the nightingale (compare n. 66 above), McKay (1960: 18) has said that "unless I am greatly mistaken, it is the most felicitous line in Hesiod", in part because "the number and variety of vowels in καὶ ἀοιδὸν ἐοῦσαν create a lyrical note". Michael Reeve reminds me of another example of Archaic Greek poetic hypervocalism, one that has magical overtones to boot: in *Odyssey* 5.61, Calypso is described as ἀϝοιδιάουσ' ϝοπὶ καλῇ#, with a melodious participle of ἀ(ϝ)οιδιάω, an artificial denominative verb found otherwise only in *Odyssey* 10.227 (#καλὸν ἀϝοιδιάει), where it is used of another enchantress, Circe, who a few verses earlier (221) is said to be ἀϝειδούσης ϝοπὶ καλῇ# (with a form of the expected verb ἀ(ϝ)είδω).

72 Katz and Volk (2000, with 127 on *Theogony* 31–2); see also now Katz (2013c: 2–3), with a selected survey of reactions in n. 7 to our idea that this is the earliest Greek example of "belly-prophecy".

73 Assaël (2006) offers an extended but under-researched account of poetic inspiration; on the *Theogony*, see esp. 103–31.

74 Breath can of course also be divine, as in the Holy Spirit.

75 Macrobius, in the context of etymologizing *Camena* (see n. 53 above) from *canere* "to sing", says that the Etruscans know that *Musas esse mundi cantum* (*Commentary on Cicero's Dream of Scipio* 2.3.4) – a striking nod to the Harmony of the Spheres (see above in the text, with n. 30).

76 It may be worth examining the vocalic makeup of exclamatory utterances such as αἰαῖ (on which see e.g. West 1997: 261–4 and now Nordgren 2015) and especially of exhortations in divine addresses, as in the refrain Εὐοῖ ὦ ἰὸ Βάκχ', ὦ ἰὲ Παιάν in Philodamus' paean to Dionysus, where the contrast between the string of vowels and the expressive gemination -κχ- in Bacchus' name is particularly pronounced.

77 This chapter is in all essential respects the same as Katz (2013a), which appeared in the proceedings of the conference "Poetic Language and Religion in Greece and Rome" held at the University of Santiago de Compostela in May–June 2012 and which is republished here

with the kind permission of Cambridge Scholars Publishing; I am grateful to Shane Butler and Sarah Nooter for their invitation to include a light revision in the present volume. The ideas were presented also at the 24th Annual UCLA Indo-European Conference (October 2012), at Yale University (February 2013) and at the University of Cambridge (June 2013); the original paper was in press by the time of the last two talks, and some minor changes in this version reflect comments I received from members of those audiences. My thanks go to the many colleagues who offered help and useful criticism and/or shared unpublished work: Tim Barnes, Josh Billings, Shane Butler, Ardis Butterfield, James Clackson, Jenny Strauss Clay, Peter Daniels, Ed Floyd, Andrew Ford, Stephanie Frampton, Renaud Gagné, José Virgilio García Trabazo, Finn Moore Gerety, Sean Gurd, Sandy Hardie, Daniel Heller-Roazen, Hans Henrich Hock, Andrew Hui, Ilaria Marchesi, Simone Marchesi, Boris Maslov, Glenn Most, Sarah Nooter, Alex Purves, Michael Reeve, Ángel Ruiz Pérez, Hartmut Scharfe and above all Alexis Manaster Ramer, whose engaged scepticism may, however, not have saved me from fundamental error. It is a pleasure to acknowledge once again the intellectual as well as financial support of All Souls College, Oxford, the John Simon Guggenheim Memorial Foundation and the Loeb Classical Library Foundation.

10
The song of the Sirens between sound and sense

Silvia Montiglio

The Homeric Sirens are endowed first and foremost with a bewitching voice. When Circe warns Odysseus of their charms, she mentions only their "voice" (*Odyssey* 12.41) and "high-pitched song", *ligurēi aoidēi* (44).[1] Odysseus is so tempted to listen that he re-writes Circe's conditional formulation, "if you should wish" to listen (49), as an order (160); and what entices the man eager for knowledge before the Sirens tempt him with it is not the prospect of learning but of enjoying the vocal beauty of a song the content of which he does not know. It is to a "voice", a *phthongon*, that he is drawn (159), to a song clothed, again, in a "high-pitched voice", *ligurēn aoidēn* (183), which invites him to stop by offering him not just knowledge of the Trojan War and of everything on earth but also, and prior to that, the "honey-sounding voice" that flows from the singers' mouths (187):

> Come here, renowned Odysseus, great glory of the Achaeans, stop your ship, and listen to our voices. No one ever sailed past in his black ship without first hearing the honey-sounding voice (*meligērun … op'*) from our lips. He delights in it and goes on his way, richer in knowledge.
>
> (12.184–8)

Odysseus glosses their call with yet another remark on its vocal charm: "thus they spoke, sending forth a beautiful voice" (192).

This emphasis on the song's auditory charm is in keeping with the Homeric appreciation for beautiful voices speaking words of knowledge or wisdom, as in the case of the Muses and of Nestor. The tension between telling the truth

and pleasing the ears, which is a staple of much fifth- and fourth-century discussion among historians, philosophers and orators, does not appear in Homer. His Sirens claim to know everything, but they lure Odysseus as much with their voices as with the proffered content of their song.[2] Rather, they begin by praising the purely vocal enticement of it.

Revisitations of the episode tend to tilt the Homeric balance between sound and sense towards the former. The Sirens' song has a seductive ring, regardless of its content. But it can also, although more rarely, please the mind rather than the ears. The first part of this chapter will focus on two opposite rewritings of the Homeric scene, one of which, by Apollonius of Rhodes, shifts the song's substance entirely to the side of sound, the other, by Cicero, to that of sense. I will then follow the fate of the second rewriting as interpreted by a Renaissance scholar, Jean Dorat, and in conclusion I will dwell on two appreciations of the Sirens' voice as a sublime and wordless music.

The Sirens know nothing

Apollonius of Rhodes has the Argonauts repeat Odysseus' journey in wonderland. Among their encounters are the Sirens, but they sing a song with no knowledgeable content – or rather, with no content worth reporting:

> [The Argonauts] saw the lovely island of Anthemoessa, where the Sirens of the high-pitched voice, the daughters of Achelous, destroyed whoever moored near them, charming him with their sweet songs… . Immediately they sent forth a lily-like voice from their mouths for the Argonauts, too. And they were about to throw the ship's cables to the shore, but … Orpheus, taking in his hands his Bistonian lyre, let the fast strain of a well-rolling tune ring loud, so that their ears might at the same time be filled with its sound. His lyre overpowered the virgin voices, and at once a fresh wind and the echoing sea that rose from astern drove the ship on, and the voice the Sirens sent forth became confused.
>
> (*Argonautica* 4. 891–4 and 902–11)

These Sirens do not issue an invitation to the travellers, as in the *Odyssey*. Against the background of the Homeric episode, their failure to address the Argonauts matches the absence of a main hero of the stature of Odysseus, especially at this stage of the voyage, where Jason's leadership is weak. He would not deserve to be the privileged dedicatee of the song. Nor, given the more communal ethos of the travellers,[3] does anyone else have a special entitlement. All of them are in fact exposed to the Sirens' voice. But Apollonius could have invented a song to fit the Argonauts' collective success, by having the Sirens celebrate the "famous deeds of men" rather than one famous hero, as he himself programmatically announces he will do in his epic (1.1–2). Later in the journey the Libyan Nymphs offer just such a celebration,

echoing the Sirens' song in Homer but changing the singular to the plural "you all": "we know that you all went after the Golden Fleece, we know every detail of your sufferings, the wanton deeds you have endured on land and at sea wandering over the deep" (4.1319–20).[4] The Sirens could have sung in a similar vein (though perhaps placing less emphasis on the Argonauts' suffering and more on their achievements, in order to entice them further). Instead they attract them with pure voices.

True, we might assume that the Sirens' attractive voices would have produced a melody with verbal content if Orpheus had not drowned them so as to prevent both the Argonauts and the readers from hearing the song, in contrast to the Homeric episode in which Odysseus does hear it.[5] But the pointed echoing of the Homeric phrase that glosses the Sirens' invitation enhances its absence from Apollonius' episode, entrusting the power of their call entirely to their voice. Whereas the Homeric singers "thus spoke, sending forth a beautiful voice" (Ὣς φάσαν ἱεῖσαι ὄπα κάλλιμον, *Odyssey* 12.192), those of Apollonius just "sent forth a lily-like voice" (ἵεσαν … ὄπα λείριον, *Argonautica* 4.903). The two voices prompt an identical reaction: both Odysseus and the Argonauts burn to follow them. The similarities in diction and response, however, bring out a major difference: "thus they spoke" is missing from Apollonius.

The phrase "they sent forth a lily-like voice" echoes more closely another Homeric passage concerned with the relation of speech to sound: the description of the cicadas "sending forth their lily-like voice" in *Iliad* 3 (ὄπα λειριόεσσαν ἱεῖσι, 152). To them are compared the Trojan elders, who no longer fight but are excellent speakers (150–1), like Nestor; and, like him, they clothe their wise speeches (see 148) in a beautiful, high-pitched voice.

Yet another passage Apollonius might have had in mind is Hesiod's account of the beauty and effects of the Muses' song.[6] They also possess a "lily-like voice" (ὀπὶ λειριοέσσῃ, *Theogony* 41), "a voice that flows tirelessly from their mouths, sweetly" (39–40), echoing on the peaks of Olympus and in the dwellings of the gods. That "immortal voice" (43), though, sings the genealogy of the gods that constitutes Hesiod's poem. Like the Homeric Sirens, the Muses offer delight (τέρπουσι) with a hymn that displays their knowledge of everything (35–6). Apollonius' allusion to these two passages, which join vocal beauty to knowledgeable speech, further highlights the absence of knowledge and speech from the allurements of his own Sirens.[7]

It has been suggested that Apollonius, by depriving the Sirens of knowledge, portrays them as less accomplished than their Homeric precedent, as well as Orpheus, who is indeed about to deafen the appeal of the Sirens' voice by his own music.[8] The competition between them and him, however, is not between a beautiful utterance and a song disclosing profound truths but, rather,

between sound and sound. Orpheus does not perform a song rich in knowledge as he does in book 1, on the eve of the Argonauts' departure. Then he resembles the Homeric Sirens, for he sings about the cosmos with a divine voice (512), which lingers on in the Argonauts' ears. Now he rushes to produce a sound powerful enough to take the place of the Sirens' voice in his fellows' ears: "he let the fast strain of a well-rolling tune ring loud, so that their ears might be filled at the same time with its sound (κρεγμῷ)". The tune is resonant but has no verbal content. It might not even be a vocal song but instrumental music, for the word *kregmos* denotes the sound of string-instruments, and, in contrast to the description of Orpheus' singing in book 1, there is no mention of his voice. In any case, Orpheus' performance defeats the Sirens not even by its beauty but by its loudness: "the lyre overpowered the virgin voices".

The addition of *partheniēn*, "virgin", to qualify the Sirens' voice in this context is highly significant, for it suggests vulnerability to male force. And indeed, their voices are raped, as it were, by the powerful music of the male player, which "does violence", *ebiēsato*, to them.[9] Apollonius has reconfigured the Homeric confrontation between the Sirens and the travellers as a musical contest in which the louder and more aggressive performance of the male player overcomes the weaker voice of the female, further diminishing the Sirens' stature. Compared to their Homeric counterpart they are degraded not only because they possess no knowledge (or at the least are prevented from displaying it), but also because Orpheus beats them not by playing an entrancing song but by producing a tumultuous strain, for which their delicate virginal voices are no match. Perhaps the novelist Longus had this episode in mind for his story of Phatta, the musical girl who was changed into a mountain dove subsequent to her defeat in song by a boy, whose voice rang louder (*Daphnis and Chloe* 1.27). (See LeVen, this volume.) Both stories tell a gendered competition of sounds in which only loudness plays a part. In Apollonius the "sounding sea", which builds yet another contrast with the eerie stillness that enwraps the Homeric scene,[10] further blurs the song of the Sirens until it becomes indistinct and loses its melodiousness: when the Argo gains distance, they are producing an *audē*, a voice, rather than a musical one, as the *aoidē* ("song") Odysseus' ship leaves behind (*Od.* 12. 198).[11]

In short, Apollonius' Sirens know nothing; their voices, the sound of which has no content, suffer violence not even from a better singer but from a louder one; in the end, their voices become blurred. Yet their musical beauty, in spite of faltering when the ship leaves the scene, sticks in the readers' ears, for it strikes the last note in the text. One of the Argonauts, Boutes, follows their call and dives into the sea, "his heart melted by the high-pitched voice of the Sirens" (914). In the string of the narrated events this might have happened either before or after Orpheus takes up his lyre and the Sirens' voice loses

clarity, but in the narrative the evocation of its charm follows both incidents, so as to ring once again in the readers' imagination. The Sirens' consolation prize is that their voice, rather than Orpheus' music, is the last sound mentioned and the only one that receives complimentary epithets (see also 893).

The Sirens' voice does not matter

Whereas in Apollonius the Sirens are pure voices, for Cicero they impart the highest knowledge, but the music of their voice becomes unimportant. To illustrate the irresistible call of study, he retells the Homeric episode as follows:

> I think that Homer saw something of the sort [the appeal of study] in his fiction about the songs of the Sirens. For, it seems, it was not by the pleasantness of their voice or by some novelty or variety of their singing that they were accustomed to drive back those passing by them, but because they claimed they knew many things, so that men were glued to their rocks by their desire to learn. This is how they invite Ulysses (I have translated some passages of Homer, including this very one): "Honour of the Argives, why don't you turn your ship, Ulysses, so you can listen and know our song? For no one has ever crossed this sea in his journey without first stopping, captured by the sweetness of our voices. Then, his eager heart satiated with many studies, he would move along and reach his native shores. We control the knowledge of the hard conflict and the destructive war that Greece inflicted on Troy by the gods' will, and all the marks of things on the wide earth." Homer saw that the story could not have been praised, if such a great man had been held enticed by petty songs. No, knowledge was their promise, which, not surprisingly, to a man eager for wisdom was dearer than his native land.
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> (*On Ends* 5.48–9)

In spite of providing a translation of Homer, Cicero undermines the Sirens' vocal talents to make them conveyors of abstract *scientia*. He reduces the song's auditory enticement by cutting the numerous mentions of it in Homer down to only one (*vocum dulcedine captus*). The promise of delight (*terpsamenos*) of the Homeric Sirens disappears. Conversely, the allurement of their *scientia* is enhanced: "He delights in it [the Sirens' voice] and goes on his way, richer in knowledge" (*Odyssey* 12.188) becomes "his eager heart satiated with many studies, he would move along and reach his native shores". Cicero adds the "many studies", the traveller's hunger for knowledge, and its fulfilment, which replace Homer's mention of the song's delight. The Sirens attract Odysseus not with music but with text.[12]

The liberty Cicero takes with the *Odyssey* reveals his intent to reduce the holistic experience of the Homeric song, a pleasure for the ears as for the mind, to a mere intellectual exposure. This twist has been made explicit in the introduction, which rules out "the pleasantness of their voice" as the Sirens'

attraction (it might be there but does not count), and is made explicit again in the conclusion, which again hammers into the readers' heads the message they have heard all along: knowledge is the enticement the Sirens offer.

Cicero's retelling of Homer goes against the prevailing Greco-Roman interpretations and uses of the song, which put a premium on its audible beauty regardless of what its content is made out to be. In particular, his claim that the song's vocal charm, if any, did not seduce Odysseus seems intended to counter the most common contemporary Roman reading of the Sirens' performance: as an erotic allurement. The charms of their song entitle them not only to stand for poets and eloquent speakers, for instance Bacchylides and Isocrates,[13] but also to be associated with professional musicians, and hence with courtesans, "excelling in both instrumental music and sweetness of voice, very beautiful; those who approached them had their substance devoured".[14] This identification, which becomes commonplace in the Hellenistic period, retained its appeal among Imperial authors. A telling instance is in Ovid's *Art of Love* (3.311–16), instructing girls that they should imitate the Sirens and learn how to sing because for many women their voice is a better procuress (*lena*) than their appearance. The eroticism of a Siren-like voice is cast in the imagery of prostitution. Petronius draws from the same set of associations when he imagines the enraptured Encolpius as hearing the Sirens' song in Circe's voice: "such a sweet sound was caressing the air … that you would have thought a harmony of Sirens sang in the breeze" (*Satyricon* 127). And Plutarch (*Table Talk* 7.5.706D), in debasing the Sirens to represent degenerate music (*kakomousia*), puts them on a par with a costly courtesan.[15]

Cicero wants the Muses of study to steer clear from the sexual lures of such Sirens, call them professional musicians/harlots or seductive girls at large. A specific reference to professional singers can be spotted in his dismissal of musical novelty and variety (*novitate quadam et varietate cantandi*), which point to consummated performers mastering a rich and up-to-date repertoire. Cicero's drive to separate the highest pursuits of the human mind from sensual and sexual pleasures causes him to reduce the musicality of the Homeric song to the bare possible minimum.

Cicero's Sirens recover vocal charms

Over 1500 years after Cicero, his reading of the song appealed to a French interpreter of Homer, Jean Dorat. A well-regarded scholar and a beloved teacher, Dorat held the royal chair of Greek in Paris and counted among his students the founder of the Pléiade, Pierre de Ronsard, and other members of this poetic movement. Some of Dorat's thoughts on Homer are recorded in the

Mythologicum ("Book on Fables"), which offers an allegorical interpretation of the central section of the *Odyssey* (books 10–12).[16] Although the text is the transcription of Dorat's lectures by a student, scholars agree that it reflects his teaching. In his extensive analysis of the Sirens' episode, he counts on Cicero's witness to defend his own views of the Sirens as the embodiment of knowledge:

> And indeed one must not consider them, following the majority opinion, as prostitutes or pleasures that bring general destruction. For Cicero absolutely rejects this allegory… . He says: "It is not, as it seems, by the sweetness of their voice or by some novelty or variety in their singing that they were accustomed to drive back those sailing past them, but because they promised knowledge of many things, so that men were drawn to their rocks by their desire to know".
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> (531–7)[17]

A striking similarity between Dorat and Cicero is that both react against an interpretation of the song that was dominant at their time, and that the prevailing interpretation is the same in the Rome of Cicero and the Paris of Dorat. By the early sixteenth century, the identification of the Sirens with prostitutes had long been fuelled by moralizing allegorical readings, which had stigmatized their sweet song as the emblem for debasing, sinful, even emasculating erotic enticements. The identification crossed over from the Pagan to the Christian world via Greek and Roman theologians.[18] For instance, Clement of Alexandria in the second century CE wrote that on the island of the Sirens "sings a pretty harlot, lust, delighting in popular music".[19] Medieval bestiaries regularly recognize in the Sirens prostitutes who can even kill their victims after putting them to sleep with their melodies.[20] The identification of those producers of enticing sounds with harlots is as common in the medieval East as in the West. Witness the twelfth-century Byzantine commentator of Homer Eustathius, who mentions current interpretations of the Sirens as "harpers" (*psaltrias*) and "courtesans" (*hetairidas*), coupling the activities of making instrumental music and providing sexual services (*Commentary on the Odyssey* 2.5.2).

Dorat knew Eustathius well and often agrees with his comments, including in his discussion of the Sirens episode.[21] The two scholars share an all-around approach to it, one that collects and encompasses the main interpretations available. Nonetheless, Dorat aggressively opposes the identification of the Sirens with prostitutes that the Byzantine author expounds, and instead resorts to Cicero as his authority to defend a reading of their song as intellectually elevated. He proceeds to cite the first two lines of Cicero's translation of Homer (adding the corresponding Greek), and the comment that glosses it: "Homer saw that the story could not have been praised, if such a great man

had been held enticed by petty songs" (543–4), to which he adds: "unless those songs contained some philosophical concept, since the Sirens promise to know everything that happens, is born and will be" (544–5). Dorat rephrases Cicero under the influence of Eustathius, who calls the Sirens theoreticians and adds the identical detail that they know also the future (*Commentary on the Odyssey* 2. 4. 24–6), but he drives home the same message as Cicero.

Or is the message exactly the same? Dorat ends his review of Cicero's passage by attacking again the moral interpretation of the Sirens: "It is now patent that the Sirens do not signify pleasures or prostitutes but scientific disciplines full of allurements and adorned with some pleasant style, an appealing novelty of subject matter, and a narration of fabulous things" (546–9).[22] The Sirens offer *scientiae*, along Cicero's lines, but not the same *scientiae*. The disciplines Cicero extols under the Sirens' name are all abstract and scientific: mathematics, musical theory, philology and philosophy. Their representatives, named in the section that follows his translation of Homer, are Archimedes, the musicologist Aristoxenus, the literary critic Aristophanes of Byzantium, Pythagoras, Plato and Democritus. Dorat starts off by being more ecumenical. He lists "poetry, history and oratorical skill" in addition to more contemplative studies such as mathematics and the investigation of nature (550–3). In the following paragraph, though, he does not mention the last two fields as the Sirens' domain but only "oratory, poetry and other inferior disciplines, which offer not so much truth and virtue as pleasantness" (556–7). It is clear that he has in mind first and foremost subjects that flatter the ears, rather than more abstract areas of study. Unless he is contradicting himself, his earlier claim that the song must contain "some philosophical concept" must mean no more than "some knowledge". His preference for poetry, history and oratory among the fields sponsored by the Sirens explains his attribution to them of both thematic and stylistic allurements. The kind of knowledge that the Sirens embody includes aesthetic and auditory pleasure as essential components of it, whereas the voice of the Sirens for Cicero is irrelevant.

Dorat, however, never goes as far as to strip the Sirens' song of content and equate it with pure musical beauty. Standing in for the latter are not the Sirens but the Lotus Eaters, who "represent those who amuse themselves excessively, for the lotus is a reed … and signifies music and harmonious melody" (609–10).[23] Dorat in the classroom apparently made this comment shortly after equating the Sirens with "oratory, poetry and the like" (606), that is, arts filled with auditory grace but also with content, whereas the Lotus Eaters delight in listening to melodies with no meaning.[24] The distinction is not just one of domain of competence but also one of moral and intellectual worth, for the production and the enjoyment of wordless sounds is the province of "those who amuse themselves excessively". Dorat is suggesting that moderate and

serious people will not linger by the pure music of the Lotus Eaters but by the pleasant song of the well-read Sirens.[25] Music, and in particular instrumental music, ranks lower than poetry, oratory, history and more theoretical disciplines.

A voice to die for

The three post-Homeric interpretations of the Sirens I have discussed have one thing in common: they imply that their song can be beneficial only if it has a verbal content. In Apollonius the song, a pure and charming voice, is dangerous. All the Argonauts would have followed it and lost their return, had Orpheus not intervened, and even in spite of his victory, one of them plunges into the sea. Cicero, in his efforts to read in the song the highest kinds of study, undermines its vocal charms altogether, overreacting, as it were, against the widespread identification of the Sirens with female musicians and prostitutes. Dorat is bothered by the same associations and endows the song with intellectual substance along Cicero's lines. Although he emphasizes its pleasantness, unlike Cicero and more in the spirit of Homer, he still identifies it with verbal disciplines and differentiates it from pure music, which he attributes to the Lotus Eaters, the unrestrained hedonists.

More ancient readings follow this pattern, playing up the incompatibility between beauty of sound and profundity of meaning. A Siren whose voice shapes wordless music at best entertains, at worst ensnares, like the Sirens of *kakomousia* in Plutarch, which seems to be entirely instrumental, or at least wordless.[26] As producers of sounds the Sirens can also bring solace, when they are merged with mourners pouring out their lament, which is first and foremost sound-matter.[27] On the other hand, philosophers, like poets and orators, are Sirens: Sirens who speak and attract with their teaching, that is. Plato apparently gave up writing poetry when he heard the Siren Socrates (Aelian, *Various History* 2.30) and he resorts to the Sirens' song to describe the life-changing effects of his teacher's goad. Alcibiades admits that he could not endure Socrates' words but "stopped his ears and ran away, as if from Sirens, in order not to grow old sitting there by him" (*Symposium* 216a6–8). He was a coward like Odysseus' companions, whereas the model disciple of Socrates should have been even more taken by his calling than Odysseus; he should have abandoned himself totally and permanently to it and renounced his lifestyle, as Plato did when he forsook poetry under the charm of that Siren. Socrates' life-changing words have the additional enchantment of the music of the *aulos* (*Symposium* 215b8–216a2), which was credited with entrancing and possessing his listeners. But the power of this uttermost compelling music

issues from "naked speeches" (215c7): speeches that entice with their sense.

The epithet "Sirens" honours other philosophers as well: Aristotle, the Stoic Ariston of Chios and Epicurus. The latter's doctrines are Sirens; and so is the tantalizing variety of philosophical schools that fascinates the Athenians.[28] In these cases the mythic singers stand for the delightful, irresistible voice of philosophy or of its spokesmen. Whereas these Sirens deserve undivided and unlimited attention because they elevate the mind, those who produce pure music should be enjoyed, if at all, only in moderation.

But this is not the whole story. The popular appeal of music *as sound*, against which ancient and medieval authors regularly rise up, affects also exploitations of the Sirens. To give just one example, the scene featuring Odysseus and the Sirens in a series of Roman sarcophagi dated to the third century CE is unlikely to reflect current allegorical interpretations of the enduring hero as the emblem of virtue resisting the "degenerate music" of which Plutarch speaks in his *Table Talk* (7.5.706D, above).[29] Rather, the Sirens illustrate the power of music regardless of its form. Their presence on the sarcophagi puts us in touch with the majority of people, pointing up their passion for wordless music. It is the sound of the Sirens' song that keeps them riveted to it, not its content.

Even the high-browed, however, could endorse the sound of the Sirens' utterance by finding elevated uses for it. To wrap up this chapter, I will offer two examples of this, one ancient, by Plutarch, and one modern, by Tomasi di Lampedusa. Both authors bestow on the song the power of drawing their listener to true reality, and for both, those powers belong to a pure voice: neither to words nor to instrumental music. In Plutarch the Sirens sing; in Tomasi di Lampedusa their charm resides in a voice that does not even sing but is itself music.

The Sirens' association with death and the netherworld, which underlies their merging with mourners, also endows their song with an unearthly meaning. Plato places a Siren on each of the eight concentric spheres of the cosmos: "on top of each of its circles stood a Siren, who was borne along with it, uttering a single sound, a single tone; but from all eight of them there sounded together a single harmony" (*Republic* 617b6–9). (See the introduction to this volume.) This celestial music, which is part and parcel of the cosmic order or rather presides over it, is a wordless vocal concert in unison.

Discussing this passage, Plutarch attributes to the Sirens the additional power of inspiring our souls with a love for the beyond:

> The Sirens of Homer indeed frighten us, in contradiction to the Platonic myth, but he, too, hinted at the truth, namely that the power of their music is not inhuman or destructive but, as it seems, it instils in the souls that depart from this world to the next a love for the heavenly and the divine and forgetfulness of mortality. It possesses them and bewitches

them with its charm, and they, seized with joy, follow them and go around with them.

(*Table Talk* 9.6.745E)

Plutarch stresses the entrancing effects of the song without commenting on its content. It falls on the magnetic force of a melody to draw our souls to the other world when we die. As long as we are alive, however, the musical summons of the beyond is complemented by words: "here a faint echo of that music reaches us and *by means of words* (διὰ λόγων) calls our souls, reminding them of their prior existence" (745E). Sound combined with sense causes the philosophically minded to yearn for death: "that soul, on account of her noble nature, perceives it and remembers (αἰσθάνεται καὶ μνημονεύει), and the passion she suffers is not far from the maddest love. She yearns and longs to free herself from the body, but cannot" (745E–F). Whereas "perceiving" is directed to the song's auditory envelope, "remembering" targets its verbal content.

Why does Plutarch emphasize the presence of words alongside music in the summons issued to the embodied soul? It could be that as a follower of Plato, that virulent attacker on wordless melodies and rhythms, he cannot push himself to bestow on the Sirens' voice alone the power to convert our soul. But this explanation is not adequate because the passage of Plato that spurs Plutarch's reflection upgrades the song to metaphysical music. And why would he add the contribution of words only to the music we hear when we are still on earth, if his point were to lessen its powers? The departing souls as well would benefit from hearing words in addition to vocal music, if words, and not a pure voice, should be the privileged transporters to the beyond.

Plutarch's reflection rather suggests the opposite: the wordless voice has greater power to lure our souls, but it needs a verbal content as a protreptic, to initiate our journey. Words must reach us while we are still alive because earthly life does not allow us access to that music in its full resonance. The unearthly voice of the Sirens is dimmed by matter and we, as long as we are also matter, can only hear a hint of it, "a faint echo of that music", which relies on words as second best, as it were, to convey its message as well as it can be conveyed to earthly ears. Plutarch's description invites a parallel with Plato's theory of love, for, he says, the passion of the soul awakened to that musical echo is like the maddest love with its metaphysical yearning. Just as Plato thinks that we need to love a body in order to begin our ascent, to long for the bodiless, Plutarch thinks we need to hear a call couched in words. Like bodies, words do not come from the beyond but help us in our journey there. Provided we imitate Odysseus, whom Plutarch configures as the model-listener. This emerges from his allusion to the Homeric episode in the contrast he draws between the soul gifted with a noble nature and the others, who are obstructed

"by barriers of flesh… , not of wax" (745D). To Odysseus the philosopher the Sirens issue not a call of knowledge, as in Homer, but of death, which, however, for a Platonic thinker is the same as knowledge. Once Odysseus "knows", that is, once he is disembodied, he can fully hear the voice of the Sirens, now a wordless voice.

To conclude, let me turn to a twentieth-century Italian text that seems to follow in Plutarch's footsteps. *Lighea* (*The Professor and the Siren*) by Giuseppe Tomasi di Lampedusa is the story of the friendship that develops between an eminent and aged professor of Greek, Rosario La Ciura, and the young journalist Paolo Corbera, the narrator. Both characters are attracted by vocal beauty to a being that will affect their life deeply, in one case by ending it.

For Corbera the voice is the older man's. When they meet, in a sordid café in Turin, he notes that the other's voice is "quanto mai coltivata, l'accento impeccabile" ("most cultivated, its accent impeccable").[30] Corbera's ears are drawn to this voice with its "strangely musical tones" and "seductive modulations".[31] The Siren-like voice of La Ciura is about to speak words that will radically transform the younger man's view of the world and its values, by making him understand the triviality of his pursuits.

For La Ciura, the life-changing voice is of a real Siren he loved in his youth. He felt a primeval attraction to her voice even more than to the fragrance of her skin and to her smile. And it was a voice, not even a song, that he heard, a voice the tones of which have fixed themselves indelibly in the professor's ears:

> [F]ui sommerso … al terzo, maggiore sortilegio, quello della voce. Essa era un po' gutturale, velata, risuonante di armonici innumerevoli. Come sfondo alle parole in essa si avvertivano le risacche impigrite dei mari estivi, il fruscio delle ultime spume sulla spiaggia, il passaggio dei venti sulle onde lunari. Il canto delle Sirene, Corbera, non esiste. L'unica musica cui non si sfugge è quella sola della loro voce.

> I was submerged … by the third and greatest of charms, that of voice. It was slightly guttural, veiled, reverberating with innumerable harmonies; behind the words could be sensed the lazy surf of summer seas, last spray rustling on a beach, winds passing on lunar waves. The song of the Sirens does not exist, Corbera: the music from which there is no escaping is that of their voices.[32]

Tomasi di Lampedusa goes further than Plutarch and Plato, denying to the utterance of the Sirens a melody other than the one inherent in their speaking, or rather sounding, voice, for La Ciura hears it *beyond* the words it shapes. It is its rich resonance, and not what it says, that submerges him. And this voice that does not sing but is itself music, music of the sea and its landscape, coming from the realm of death and immortality,[33] has the same power Plutarch attributes to the Sirens' song that only echoes on earth from the

beyond: it is a call of death, of deliverance. On the eve of her departure fifty years earlier his Siren had told La Ciura: "dovresti seguirmi adesso nel mare" ("you should follow me now into the sea"); "quando sarai stanco … non avrai che da sporgerti sul mare e chiamarmi" ("when you are tired … you have only have to lean over the sea and call me").[34] Towards the end of the story, La Ciura leaves on a ship to Portugal for an academic conference. He never gets there, but throws himself overboard and dies.

In death, La Ciura recovers the sound of Greek and with it the meaning of life. His fellow academics speak rubbish because they have never *heard* Greek, because in their minds it has no sound, no flesh: "lo spirito vivo di questa lingua … non è stato loro rivelato … come potrebbero avvertirlo … se non hanno mai avuto occasione di sentirlo, il greco?" ("the live spirit of that language … has not been revealed to them … how can they sense that spirit if they have never had occasion to hear real Greek?").[35] He, on the other hand, has an almost carnal awareness of classical antiquity ("il senso vivace, quasi carnale, dell'antichità classica")[36] from having heard Greek uttered by the Siren he loved. Now he dies to hear her voice forever in the depths of the sea to which it belongs and of which it is made. Just as Plutarch's philosophically minded listener to the Sirens' song longs for leaving his mortal prison to return to his divine origins, so does the famous scholar follow the call of his Siren to return to the divine life he had known in his youth.[37] For then he first heard a voice that has kept ringing in his ears ever since, the full resonance of which detached him once and for all from all the meaningless babble of the world.

1 On *ligus/liguros* as laudatory terms, see Stanford (1967: 149–51); Stanford (1969); Montiglio (2000: 76–7).

2 Another feature of the song that seduces Odysseus is the Sirens' appeal to him as the hero of the *Iliad*. See Pucci (1998), who demonstrates that the diction and the grammar of the Sirens' song is Iliadic.

3 See especially Hunter (1993: 24–5).

4 On the transference of the Sirens' song to the Libyan goddesses, see Knight (1995: 204, 126).

5 This is suggested by Goldhill (1991: 299), followed by Knight (1995: 202–3).

6 Both passages are referenced by Livrea (1973: 262), on 4.903

7 The allusion to Hesiod might also hint to Apollonius' Hellenistic poetics: see Angiò (1995).

8 Kyriakou (1995: 260). See also Goldhill (1991: 289–90). The Sirens' voice, however, would have been as irresistible as in Homer, for the Argonauts survive only because Orpheus deafens it, and one of them does follow it. Contra: Knight (1995: 203).

9 See also Knight (1995: 203–4).

10 See Goldhill (1991: 300); Knight (1995: 202).

11 See also Knight (1995: 203).

12 See Wedner (1993: 88).

13 *Greek Anthology 9.184; Philostratus, Lives of the Sophists* 1.17.1. More sources in Kaiser (1964: 113–21); Holford-Strevens (2006: 22).

14 This is an excerpt from one Heraclitus (fourth or third century BCE) in Rahner (1963: 356) and Holford-Strevens (2006: 24). More sources equating the Sirens with harlots are in the latter article.

15 More sources in Kaiser (1964: 121–3).

16 Text and commentary in Ford (2000).

17 *Neque vero per has ut plurimi existimant sunt intelligendae meretrices aut voluptates quae unumquemque perdere conseruerunt. huic enim allegoriae penitus Cicero refragatur… . Neque enim inquit vocum suavitate videntur aut novitate quadam et varietate cantandi revocare eos solitae qui praetervehebantur sed quia multa se scire profitebantur ut homines ad earum saxa cupiditate discendi adhaerescerent.*

18 See Rahner (1963: 365–6, 368). Wedner (1993) reviews the medieval interpretations of the Sirens author by author.

19 Clement of Alexandria, *Protrepticus* 12.118.2: ᾄδει δὲ ἐν αὐτῇ πορνίδιον ὡραῖον, ἡδονή, πανδήμῳ τερπόμενον μουσικῇ.

20 See Leach (2006a). This article has a rich discussion of medieval texts warning against the dangers of the Sirens' song in its non-linguistic component.

21 See Ford's commentary (2000), passim. For instance, alongside the idealizing interpretation of the Sirens as carriers of knowledge Dorat endorses disparagement of them as "miseries, troubles and torments" in the same league as Scylla and Charybdis (331–2).

22 *scientias illecebrarum plenas atque suavi quodam eloquio rerumque iucunda novitate et mirabilium narratione exornatas* (547–9).

23 *Lotophagi sunt ii qui plus aequo oblectantur. nam* γλοτος [*sic*] *est canna … et significat musicam aut harmoniam melodicam.*

24 Ford (2000: 127) suggests that mention of the lotus in this context might have been inspired to Dorat by Eustathius, who contrasts Odysseus' unwillingness to taste the flower and his inability to resist the Sirens' song. For Eustathius, however, the lotus is food, not music.

25 By "linger" I do not mean forever. Dorat advocates a balance between contemplation and action. In this respect his approach to the Sirens' song differs from Cicero's, who does not put any limit to its enjoyment. See Montiglio (2011: 154–6).

26 The occasion for the discussion is the performance of an *aulos* player, and the dangerous enticements of music are summarized as "melody" (μελῶν) and "rhythm" (ῥυθμῶν) (*Table Talk* 705F).

27 See especially Euripides *Helen* 164 ff. where only the tones and the music of the dirge are stressed, not a verbal content. See also Statius, *Silvae* 2.1.10; 3.3.174; Lycophron, *Alexandra* 1463; on the Sirens as mourners see Kaiser (1964: 112, n. 8); Collignon (1911: 12–14, chapter 4).

28 See Julian, *Orations* 7.237c; Diogenes Laertius, *Lives of Eminent Philosophers* 10.9; Philodemus, *Rhetoric* 2, p. 145 in Kaiser (1964: 117, 120).

29 See Ewald (1999). The interpretation of the images, however, is highly controversial: see the discussion in Ewald and in Courcelle (1944).

30 The original is quoted from Tomasi di Lampedusa (1962: 57); the English translation, here and following, if that of Tomasi di Lampedusa (1995), sometimes slightly adapted. This passage is Tomasi di Lampedusa (1995: 61).

31 Tomasi di Lampedusa (1995: 63–4). The Italian is "con la voce stranamente musicale" (1962: 60), "con l'avvincente modulazione della sua voce" (1962: 61). On Cordera's emphasis on La Ciura's voice, see Henrot (1987: 51–2).

32 Tomasi di Lampedusa (1962: 85, 1995: 78–9).

33 "Il mare dà la morte insieme all'immortalità" (1962: 64).

34 Tomasi di Lampedusa (1962: 89, 1995: 81).

35 Tomasi di Lampedusa (1962: 61, 1995: 63–4).

36 Tomasi di Lampedusa (1962: 59).

37 La Ciura was a young man of rare beauty, a "giovane dio" (1962: 72).

11
Auditory philology[1]

Sean Gurd

In the late 1960s, Alvin Lucier sat down in a room and spoke the following words into a microphone:

> I am sitting in a room different from the one you are in now. I am recording the sound of my speaking voice and I am going to play it back into the room again and again until the resonant frequencies of the room reinforce themselves so that any semblance of my speech, with perhaps the exception of rhythm, is destroyed. What you will hear, then, are the natural resonant frequencies of the room articulated by speech. I regard this activity not so much as a demonstration of a physical fact, but more as a way to smooth out any irregularities my speech might have.[2]

Over the course of about twenty iterations, these words become increasingly less audible, until by the end the microphone captures only eerie pitches overlapping with a resonant beauty: the sound of the room, "articulated by speech", rather than the sound of speech, articulated in a room, with which the piece began.

I Am Sitting in a Room is a standard reference point for historians and critics of electro-acoustic music. But it is also an important statement about language and about the relationships between language, sound and art. Using rudimentary technical means, Lucier drew attention to the unheard materiality subtending language. When I speak, my vocal tract produces a complex vibratory wave with a base frequency corresponding to the (variable) pitch of my voice, together with a series of overtone frequencies. My throat, nose, tongue, teeth and lips modulate the overtone frequencies or "formants"; the hearer cognizes the result of these modulations as phonemes and words. The verb "cognize" is important. Speech is not an acoustic phenomenon – the acoustic phenomenon is vibration – but a cognitive achievement, a remarkable

act of mind.

To amplify and then capture the vibratory frequencies that we cognize as language, *I Am Sitting* sets up a non-human apparatus in the form of a room and a recording device. The dimensions and materials of all enclosed spaces give the air within them a propensity to vibrate at certain frequencies: if one of those frequencies is played, the air will vibrate in sympathy. When Lucier played the recording of his voice in the room, it resonated with the frequencies in his voice to which it was "tuned" – some of which were the harmonic overtones whose manipulation by his vocal tract produced the sounds we hear as vowels and consonants. When Lucier recorded the playback, he captured its sound with the amplitudes of certain frequencies enhanced by the room. Playing the recording back into the room, recording the playback and then playing the recording back into the room (etc.) serially amplified certain frequencies of speech at the expense of others, and by the end of the process intelligible speech had disappeared. In an important sense, then, *I Am Sitting* makes audible as sound what is normally experienced as speech.

Though listeners normally encounter the piece in one of two recordings made by Lucier, it is in fact a performable score. The length of the process and the sound of the result will never be the same: they depend on the voice of the performer, his or her accent,[3] the volume of the playback, the dimensions and materials of the room, and the humidity and temperature of the air within it. We are in the realm, in other words, of unique events, not reproducible effects.

And yet Lucier claims that *I Am Sitting* is meant to eliminate irregularities in his own speech, the most obvious of which is his stutter. On first reflection, the piece seems to succeed: traces of that stutter are very difficult to detect in the final iterations. But second reflections prompt the realization that the work does not eliminate the peculiarities of Lucier's speech; it just re-articulates them on another plane, in another mode and with another rhythm. "Beneath" the linguistic utterance of Lucier's text there is a further series of singularities: as he speaks, his vocal cords vibrate and shift in length and tension, and his jaw, tongue, teeth and lips are in continuous motion, each movement altering the sound of his voice. He moves his vocal tract to articulate phonemes and words, but stable sounds are not what he makes. Consonants and vowels overlap and interact, altering the way they are formed. No linguistically significant sound, although it may seem to be the same sound each time we hear it, has the same acoustic profile: every utterance is acoustically unique.

Against the generality of language, then, *I Am Sitting* constructs a chain of oppositions, linking the vibratory pre-linguistic, the specifics of individual speech and the iterable performativity of the work of art.

* * *

I Am Sitting has company. Sappho:

> δεῦρύ μ᾽ ἐκ Κρήτας ἐπ[ὶ τόνδ]ε ναῦον
> ἄγνον, ὄππ[ᾳ τοι] χάριεν μὲν ἄλσος
> μαλί[αν], βῶμοι δὲ τεθυμιάμε-
> νοι [λι]βανώτῳ
>
> ἐν δ᾽ ὕδωρ ψῦχρον κελάδει δι᾽ ὕσδων
> μαλίνων, βρόδοισι δὲ παῖς ὀ χῶρος
> ἐσκίαστ᾽, αἰθυσσομένων δὲ φύλλων
> κῶμα κατέρρει·
>
> ἐν δὲ λείμων ἰππόβοτος τέθαλεν
> ἠρίνοισιν ἄνθεσιν, αἰ δ᾽ ἄηται
> μέλλιχα πνέοισιν [
> […]
>
> ἔνθα δὴ σὺ στέμ<ματ᾽> ἔλοισα Κύπρι
> χρυσίαισιν ἐν κυλίκεσσιν ἄβρως
> ὀμμεμείχμενον θαλίαισι νέκταρ
> οἰνοχόαισον.

> Here to me from Crete to this holy temple, where is your lovely grove of apples, and altars smoking with incense; cool water murmurs through the apple branches and the whole place is shaded with roses and sleep flows down from the flashing leaves; and there is a meadow there, which nourishes horses and blooms with spring flowers; and sweet leaves breathe … there, Aphrodite, take your garland and pour nectar, mixed with joyful gatherings, gracefully into golden cups.[4]

Like Lucier, Sappho builds a sonic presence akin to the unheard auditory beyond linguistic articulation. She does it using the phonological elements of Greek, usefully annotated in alphabetic writing; here the language's phonology is orchestrated into patterns that figure the complex pre-cognitive – that is, pre-linguistic – acoustic wave. Language-immanent structures such as prosody or metre are less important to this process than its unrepeatable, seemingly ephemeral, non-periodic soundscape. Take, for example, the final stanza. It is given integrity by the persistent expression of σ (three times in 13, four times in 14, once in 15, once in 16), combined with a pattern of glottal plosives (κ and χ; *Κύπρι*/*χρυσιαίσιν ἐν κυλίκεσσιν* … / ὀμ<με>μει*χμενον* … νέ*κταρ*/ οἰνο*χόαισιν*); the -νθ- of ἔνθα is repeated across the word juncture -ον θαλι- in line 15. Lines 13–14 pulse with υ- sounds. These patterns are irregular: they could not be called "structuring principles" or reduced to a grammar. They are just the sounds of the poem, without which it would be something else, an

ever-changing, irreducible vocal melody. But the unique auditory arrangement figures the vibratory patterns language strips away: like sound itself, the poem unfolds in an inexorably temporal way. Here again, we can see the poem figuring the acoustics of speech: if it is true that when faced with the variations of amplitude in a complex and non-periodic wave the auditory system postulates multiple periodic vibrations, then samples and interprets some of these for processing as speech, it is also true that poetry takes these periodic vibrations and deploys them as plastic material, producing higher orders of non-periodicity. In doing so it recalls its acoustic origin in the noise beneath language.

The elaborate re-performance of sound that the poem undertakes is most intense in the description of murmuring water (5–6). This passage ripples with complex auditory arabesques and polyrhythms. The sequence ε–υ–ω appears at the beginning of line 5 with ἐν δ' ὕδωρ, then repeats in κελάδει δι' ὕσδων – although it is interrupted by -άδει δι-, a near-rhyme that also continues the chain of δ- sounds through the line. (See Katz in this volume for other instances of sonic play with vowels in Archaic Greek poetry.) Here the subject of the poem and its ability to figure the acoustic substrate of speech come into closest contact. Like the cool, green grove it describes, Sappho's hymn to Aphrodite is a moment of verbal calm wrested from the noisy wilderness of everyday speech. The contrast in this poem is not between a garden and oppressive urban life but between a garden and the oppressive natural landscape. Although most of its delights are organic, the grove is intensely cultivated: culture makes this space. But the enclosure is not complete, nor can it be. Within this artificial environment, Sappho's sonorous brook is the one element not fully the product of artful cultivation. In fact, the brook came first; its location determined that of the grove. Water can be guided but not formed: you can shape a stream, line its banks, even change its bed – but you cannot make the water go uphill, or make a dry bed flow. Although it is an integral part of the garden, it also exceeds it: it enters from outside and continues beyond. The brook's sound is a symbol of its wild primacy and it echoes with the sound of the poem, summoning the audible much as a love song summons the force of desire.

Aphrodite: laughter-loving goddess, born of the foam from the Titan Cronos' severed genitalia, governing power of procreation, but also queen of madness, of a desire that loosens the limbs, steals the lungs, drives us from the shelter of acceptable behaviour and robs us of our shame. When Sappho summons this power, she summons a force that at once gives and disrupts form, a force defined both by sensual delight and a terror that energizes these delights from within. Sound participates in this uncanny poetics. Indeed, it is through such a poetics that we can hear the poem in the first place.

* * *

φαίνεταί μοι κῆνος ἴσος θέοισιν
ἔμμεν' ὤνηρ, ὄττις ἐνάντιός τοι
ἰσδάνει καὶ πλάσιον ἆδυ φωνεί-
σας ὑπακούει

καὶ γελαίσας ἰμέροεν, τό μ' ἦ μὰν
καρδίαν ἐν στήθεσιν ἐπτόαισεν,
ὠς γὰρ ἔς σ' ἴδω βρόχε' ὤς με φώναι-
σ' οὐδ' ἔν ἔτ' εἴκει,

ἀλλ' ἄκαν μὲν γλῶσσα †ἔαγε λέπτον
δ' αὔτικα χρῷ πῦρ ὐπαδεδρόμηκεν,
ὀππάτεσσι δ' οὐδ' ἔν ὄρημμ', ἐπιρρόμ-
βεισι δ' ἄκουαι,

†έκαδε μ' ἴδρως ψῦχρος κακχέεται† τρόμος δὲ
παῖσαν ἄγρει, χλωροτέρα δὲ ποίας
ἔμμι, τεθνάκην δ' ὀλίγω 'πιδεύης
φαίνομ' ἔμ' αὔται·
ἀλλὰ πὰν τόλματον ἐπεὶ †καὶ πένηται†

He seems to me to be like the gods, that man who sits opposite you and hears you speaking sweetly and laughing lovely – which makes the heart in my chest palpitate. For when I look at you I tremble so that I have no voice left but my tongue goes mute and slender fire runs beneath my skin and there is no more sight in my eyes and my ears rumble and cold sweat pours over me and my whole body trembles and I am greener than grass and I seem just a little short of dead. But all must be dared, since even poverty …[5]

Sappho's poem stages an irreversible destruction of language: the consequence is that a poem, a sonorous artefact, emerges. Charles Segal charted the sounds in the last two stanzas:

A strong alliteration of *k* and *g* in line 9 seems fairly probable… . It is strengthened by the *k* alliteration of αὔτικα χρῷ (at once beneath my skin) in the next line. The *d* sound at the beginning of that line (10, δ') continues in the impressive drumming *d*'s of ὑπαδεδρόμηκεν (has run beneath), which follows up the chiasmic *pu/up* pattern in πῦρ ὑπεδρεδρόμηκεν (fire has fun beneath). A similar, but more complex pattern recurs in the next line (11) in the *or-m-/-rom-* sequence of ὄρρημμ' ἐπιρρομ- (I see … are humming). The drumming *d* beat of line 10 is taken up again in line 13, reading Page's emendation: κὰδ' δέ μ' ἴδρως ψῦχρος ἔχει (a cold sweat covers me). Here, as also in line 10, the alliteration of *k* sounds accompanies the *d*'s. Vowel patterns also reinforce the repetitive effect, especially the strongly marked sequence of open *o*-sounds in line 11 and the *a* sounds of line 14: παῖσαν ἄγρει, χλωροτέρα δὲ ποίας (a trembling seizes me, and I am paler than grass).[6]

Segal interprets these sounds as the embodiment of an "incantatory" poetics whose aim "is to lift the daimonic power of eros out of the realm of the formless and the terrible, bring it into the light of form, make it visible to the individual poem and, by extension, to his or her society".[7] Segal seems to mean that the song and its sound-patterns represent a kind of control or formalization of the effects of *eros*. I hesitate here. Without doubt, this poem descends into *eros* as the negation of form. But I am not sure it comes all the way back. Instead, the encounter seems to result in the crippling of language from within and from without. The sounds Segal identifies are the poetic equivalent of the humming that overwhelms the speakers' ears: the poem's sonorousness is the material correlate of its theme.

The first word, φαίνεται, is echoed in the fragment's final complete line with a change of subject (φαίνομαι). This carefully plotted verbal repetition invites us to consider more explicitly the contrast between "him", as he is described in line one, and "me", especially as described in the last complete line. The contrast is immediate and clear. "I" am "almost dead"; "he" seems "equal to the gods". It is a contrast, in other words, between quasi-immortality and extreme mortality. The movement of the poem is from the first (observation of a scene so happy as to seem immortal) to the second (self-observation on the part of a nearly dead, utterly devastated sufferer of erotic desire), via a series of physiological responses so devastating that the speaker loses her ability to communicate with, and eventually even to sense, the outside world. She literally becomes material, a passionate vibration.

Her experience is the result of an external stimulus, described in verses 2–5, where "he" sits opposite "you", listening to "you" "speaking sweetly" (ἆδυ φωνείσας, 3–4) and "laughing in a lovely way" (γελαίσας ἰμέροεν, 5). Her first reaction is a loss of voice. This matches exactly the voiceful beloved in the first stanza. Indeed, both occur in the same metrical position, although they describe exactly opposite experiences. The end of the first stanza runs its five syllables through two words without elision or hiatus, and manages an extreme vocalic economy, repeating the syllable-sequence -α-υ- twice before concluding with ει. This smooth, carefully patterned termination fits well with the calm, almost ambrosial situation of the first stanza. The end of the second stanza begins with the same word in the same metrical position then moves in a different direction: its five syllables run through five words and a total of three elisions – only two words (ἔν and εἴκει) are complete. The result is a fracturing of speech at exactly the point where the poem begins to describe the same process. This enacts the breaking up of the tongue described in the next stanza's first line. We can reconstruct what happens in the relationship between sound and sense here. The elisions remove the terminal syllable from three out of five words, and a reader or hearer who wants to reconstruct sense

will need to supplement what she reads or hears. This is not difficult: elision rules are limited and a competent reader can come up with the right terminal syllables pretty easily. But there remains a radical disjunction between the sense of the line and its sound. More sound than meaningful utterance, the line offers only a fragment of sense.

The speaker's linguistic crisis is symptomatic of an ongoing process of chaotic inwardness. The third stanza details the effects of the speaker's discombobulation on two other senses – fire under her skin (touch) and darkness in her eyes – then turns to her hearing, which is overcome by humming. This experience mirrors the "gentle fire" that runs beneath her skin; both describe subtle interferences in the body's customary interface with the world. The humming of the speaker's ears impedes their usual function of sensing the outside world and increases the volume of the inside world. Just as her broken tongue prevents her from communicating, her humming ears tune her to an internal environment experiencing sudden and catastrophic collapse. The climactic position of auditory pathology at the final line of the third stanza draws attention to the fact that this inwards humming is an intensification or amplification of the sound of "you" that laughs in the first stanza.

The final stanza shifts its focus from the speaker's imploding sensorium to an inwardly felt somatic pathology: she sweats, shakes and changes colour, then seems to herself to be practically dead. This "I seem to myself" closes the circle that began at the beginning of the poem with "he seems to me". Despite the extreme contrast between his quasi-immortality and her near-death, the speaker also resembles him: for now she, too, only *seems*, even to herself. She began as a third-person observer of other people's experience and she ends as a third person to herself.

In *Parables of the Virtual*, Brian Massumi locates affect in a stratum of somatic response that exists prior to the separation of sensation into its different modalities. Affect, he argues, is fundamentally synaesthetic.[8] Sappho's poem seems affective in just this sense. Her

> affective sensorium … becomes a rhythmic transducer composed of not just the five exteroceptive channels that open onto the external environment, but also the viscerality of interoception, which is sensitive to intensity minus quality and in a sense preempts exteroception in that it makes decisions before the consciousness of extensive sensory objects fully emerges

– to hijack a sentence written by Steve Goodman to describe not-so-different contemporary realities.[9] At such moments there is a broad deterritorializing of the sensorium.

But these moments remain virtual, detectable only as stories vaguely remembered or in symptomatic textual details. After the extreme affect, there

must be a moment of capture or crystallization. Thus the passionate becoming-other of the speaker has a consequence: the poem itself, affect of language.[10]

* * *

The works of Lucier and Sappho are about the relationship between sound and language. But this relationship is not as it has been sketched in the tradition of language-based thinking about poetry represented most forcefully, perhaps, by Roman Jakobson. Jakobson, famously, thought poetic language use drew attention to the materiality of a communication by "projecting the principle of equivalence from the axis of selection into the axis of combination".[11] In a line of quantitative verse, for example, all long syllables are treated as metrically identical and the rhythm of the line emerges because this assumption allows a pattern to become audible. Jakobson extended his analysis beyond structuring features like metre, identifying in paronomasia and auditory parallelisms ("sound effects") further examples of the projection of equivalence onto the axis of combination.[12] As a result, poetic language use is said to foreground or emphasize sound as a constitutive element ("the relevance of the sound-meaning nexus is a simple corollary of the superposition of similarity on contiguity").[13]

But for Jakobson the ultimate result of the poetic function is to draw attention to language as such – or at least to language as the object of linguistic science. I would counter that Sappho and Lucier draw attention not to language but to the complex vibratory temporalities "beneath" or beyond it. A poem is not language. If it retains linguistic elements, it does so because they are inherent in its medium, not because it takes its identity or its essence from them. Indeed, it is more accurate to say that poetry uses language in ways that fundamentally subvert our habit of treating language as a "transparent medium". Exploiting the acoustic properties of language, or miming them in a poem, does not amount to a theory of language, nor is it a *gestus* meant to make us aware of it. There is no moment of unity, no "nexus" between sound and sense, and the auditory presence that emerges is not a self-presence of the type crucial for Western metaphysis (and critiqued by Jacques Derrida as phonocentric). Rather, in both describing and working with sound, a poem can reduce the space between signifier and signified to an interval optimal for allowing the mutual interferences of language and art, sound and order, to produce dissonant overtones all their own.[14]

In this, it resembles onomatopoeia. Derek Attridge observes that onomatopoeia and other "sound effects" rely on the simultaneity of a semantic description and an enhancement of linguistic sound or, as he puts it, "the momentary and surprising *reciprocal* relationship established between

phonetic and semantic properties, a mutual reinforcement which intensifies *both* aspects of language".[15] Attridge concludes that such moments of intensified auditory awareness can only be catastrophic for "normal" linguistic cognition, which presumes unmediated contact between language and reality.

> If onomatopoeia is to be judged in terms of the accuracy with which it enables the sound of language to reproduce the sounds and other physical characteristics of the non-linguistic world, then the more successful it is … the more it is bound to come into conflict with the necessarily abstract nature of the language system, foregrounding the physical properties of speech (and writing), and drawing attention to itself as a rhetorical device, instead of melting away in a presentation of unmediated reality. The more it succeeds, that is, the more it fails.[16]

"Onomatopoeic" passages in poetry are, thus, critically important because it is there that a poem strains towards a truth of language *beyond* sense, a truth of language that in some way obviates language at the same time.

What if poetry were the ungrounded, anxious improvisation of a voice that has lost its footing in language? Reflecting on Jakobson's definition of the poetic function, Werner Hamacher suggests that Jakobson's image of two linguistic "axes" implies a point at which they intersect:

> When Jakobson opposes the "poetic function" as substation on the axis of equivalences to another – one could say "prosaic" – function that is realized through combination on the axis of continuities, then the geometry of their relations implies that both axes cross in a zero point at which they follow both a logic of substitution and of contiguity, of poetic as well as of prosaic functions – and also of neither of the two… . Zero rhetoric would be that which marks the empty place – and, more precisely, the opening for a place – which is necessary in order to safeguard the possibility of a language at all. Only the philology of the zero would be the *origo* of philology.[17]

This zero-point where selection and combination coincide and yet do not happen is no longer language but an all-too-tangible materiality. It is from this self-positing space that the "projection" of the principle of equivalence from one axis to the other happens: a throwing forward, a gambit, an improvisation. If it is true that "philology is the event of the freeing of language from language",[18] the work of Lucier and Sappho are the consequences of just such a jailbreak: and, as in all fugues, whatever logic their languages embody is overwhelmed by an unfolding melody.

* * *

Let us return to the beginning: prior to language, there is sound. Already in Democritus human speech is imagined, in an evolutionary mode, as the elaboration of an earlier condition in which humans communicated to each other using inarticulate sounds. (See Nooter in this volume on the use of

inarticulate sounds for human communication in Attic drama.) In Plato's *Philebus*, voice is treated as a continuum between unity and infinite multiplicity – one voice, many sounds – in which language is articulated, as though the mouth were literally cutting up and sorting the voice as it came out of the throat. But even as we imagine the material prior to language, even as the poem exceeds language, this happens *in* language, *with* language. Call that auditory philology, or logophony, as Shane Butler does in his chapter in this volume. It seems to me that the imagination of sound is not merely archaizing. There is also a kind of hopeful prognosticating about it. To imagine speech as the impassioned cry from which a better language would be grown – as good a definition as any for poetry and philology alike.[19]

The temporal relations implied here are remarkably complex. A poem that amplifies its sonic characteristics becomes a figure for the vocal "material" in which it is articulated, and might therefore be said to resonate with its archaic substrate. But it is also a figure for what it will have been relative to the language it imagines is to come.[20] So Sappho summons Aphrodite, imagines her *advent*, even as she makes her present via the figural invocation of the poem's linguistic substrate. Between the past and the future, those two infinities, the poem (as Derrida said once).[21]

Hesiod's *Catalogue of Women*, a compendious account of women who coupled with gods in the age of heroes, has a poetic interest in sound: in an early episode, it seems to have featured the birth of Hellen (Fr. 8 M-W), the eponymous hero of the Hellenes, and to have ended with an account of the birth of Helen, whose adventures marked the end of an epoch (Fr. 204 M-W). The names do not sound exactly alike in Greek, but they nonetheless make a soft rhyme that joins the piece's beginning to its end. On what I do not think is an unrelated note, the poem was known to some ancient readers as "the *Ehoiai*" because it featured an unusual syntactic device at major points of structural articulation. In Merkelbach and West's reconstruction, the poem was organized in genealogical fashion, proceeding down family trees and naming women in lines of direct descent. Occasionally the poet had to leave a stemma and move up to the branching off of another line, effectively going backwards chronologically; at these moments he introduced a new section with the formula ἠ' οἵη, "or such as". ἠ' οἵη consequentially functions both as a gesture towards the past and the future: narratively, it says that we are moving forward to a new section, but mythically it signals a step back.

The formula ἠ' οἵη has some clear and important generic relationships in archaic and early classical poetry. It suggests a link with the epic simile, that major structuring principle in the *Iliad*, through which diegetic and figural representations meet and are confounded in so many ways (see below). Syntactically, it looks forward to the major genres of public choral song, where

a poet often shifted from a concrete historical reference to the exploration of a mythical parallel using a relative clause. In both contexts, myth (in the case of epinician and other public choral forms) and simile (in epic) are presented in syntactically subordinate position; and in both contexts, too, the connection between a subordinate illustration and its historical or narrative context is often highly ambivalent and complicated, with the tangle of coalescences and divergences contributing to the concrete specificity of the song. In the *Catalogue*, however, the functions of subordination and illumination have been emptied out; it is likely that the logical antecedent of ἠ᾽ οἵη is merely the "women who mingled with gods" of the proem (Fr.1.1–5 M-W). There is, in other words, no other story or historical referent outside the tales the expression introduces. The result is a subordinating gesture without issue or conclusion, in which the poet asks again and again for stories of women *like the women whose stories he tells*; each story is an example of nothing other than itself. The ἠ᾽ οἵη, in other words, seems to be losing its semantic value at the expense of a purely structural one. Such, indeed, was the understanding of Rutherford,[22] who suggested that ἠ᾽ οἵη came from an earlier (but not extant) genre in which catalogues were organized thematically rather than genealogically, and in which the semantic value of ἠ᾽ οἵη was much more richly exploited. What we have in the extant *Catalogue of Women*, he proposed, is an example of "automatization", that is, of a process in which a generically functional feature (the simile) is reduced to a pragmatic feature, allowing other functions to take the forefront – in this case, the genealogical.

The *Catalogue of Women* was a popular model for later genres of catalogue writing, many of which adopted similar patterns of subordination. As Rutherford puts it:

> It has become a truism that the catalog genre was popular with Hellenistic authors. The best example is Hermesianax's *Leontion* (*CA* 98–100), a poem on intellectual figures and their beloveds, some of the entries being introduced by the formula οἵην (Hesiod's Beloved is a girl called Ehoie: line 24)… . Another example is Phanocles' *Erotes ē Kaloi* (*CA* 106–107), where successive entries seem to have been linked by the formula ἤ ὡς.[23]

Hesiod's ἠ᾽ οἵη, then, whose syntactical looseness seems to amplify its sonority, not only pointed back to an earlier but lost catalogue poetry: it also evoked one that was yet to come. Perhaps I would be putting it too strongly if I called ἠ᾽ οἵη both nostalgic and utopian. Pascal Quignard was more moderate when he talked about language use in which reference seems to be emptying out, when language-to-come is conjured via the materiality of a language-less-than-language in the present: he called this a *rhétorique spéculative*, a speculative rhetoric.[24]

* * *

The emptying of language for language's sake is bound to be disruptive, to raise some hackles, even as others claim for it a central role in the survival of living language and culture. But that double valence, that uncanny ability to be both reassuring and terrible, is just what you should expect. One last example.

At a crucial moment in the *Iliad's* narrative development, in the twenty-first book, sound explodes with elemental force. Up until this point, sound has appeared primarily in descriptions of nature, and almost exclusively in similes describing martial realities – the sound of clashing armies, for example, is compared to mountain rivers colliding with a roar.[25] In *Iliad* 21, however, this changes. Achilles, whose rage has been building for several books (and has been accompanied by a gradual increase in sound, beginning in book 18),[26] descends into the river Scamander, slaying soldiers as he proceeds:

> ἐν δ' ἔπεσον μεγάλῳ πατάγῳ, βράχε δ' αἰπὰ ῥέεθρα,
> ὄχθαι δ' ἀμφὶ περὶ μεγάλ' ἴαχον· οἳ δ' ἀλαλητῷ
> ἔννεον ἔνθα καὶ ἔνθα ἑλισσόμενοι περὶ δίνας.
> ὡς δ' ὅθ' ὑπὸ ῥιπῆς πυρὸς ἀκρίδες ἠερέθονται
> φευγέμεναι ποταμόνδε· τὸ δὲ φλέγει ἀκάματον πῦρ
> ὄρμενον ἐξαίφνης, ταὶ δὲ πτώσσουσι καθ' ὕδωρ·
> ὣς ὑπ' Ἀχιλλῆος Ξάνθου βαθυδινήεντος
> πλῆτο ῥόος κελάδων ἐπιμὶξ ἵππων τε καὶ ἀνδρῶν.
> Αὐτὰρ ὃ διογενὴς δόρυ μὲν λίπεν αὐτοῦ ἐπ' ὄχθῃ
> κεκλιμένον μυρίκῃσιν, ὃ δ' ἔσθορε δαίμονι ἶσος
> φάσγανον οἶον ἔχων, κακὰ δὲ φρεσὶ μήδετο ἔργα,
> τύπτε δ' ἐπιστροφάδην· τῶν δὲ στόνος ὄρνυτ' ἀεικὴς
> ἄορι θεινομένων, ἐρυθαίνετο δ' αἵματι ὕδωρ.

> And they fell into the river with a great noise, and the steep stream resounded and the banks around shouted greatly. But they swam here and there shouting, whirled about in the eddies. As with the onslaught of fire locusts hang in the air, fleeing towards a river – but the tireless fire burns them, surging without warning and they shrink into the water, so was the stream of deep-eddying Xanthus [Scamander] filled with the confused noises of horses and men under Achilles' advance. But the god-sprung one left his spear leaning on a tamarisk bush there by the bank and leapt down like a *daimon* holding only his sword. He intended terrible things, and he turned to all sides to strike out. A hideous groaning arose from them as they were struck by his sword and the water rushed red with blood.[27]

Auditory descriptions coincide with the ostentatious use of sound effects in the homoioteleuton of sound words in 9–10 (μεγάλῳ πατάγῳ, ἀλαλητῷ); the thundering and shouting of the river banks is emphasized with alliteration on

χ (βράχε … ὄχθαι … ἴαχον); heavy assonance on α links all the sonic descriptions in these lines (μεγάλῳ πατάγῳ, βράχε δ' αἰπὰ ῥέεθρα,/ὄχθαι δ' ἀμφὶ περὶ μεγάλ' ἴαχον· οἳ δ' ἀλαλητῷ, 9–10). In line 11, a remarkable rhyme on ἐν, coupled with the vivid phrase ἔνθα καὶ ἔνθα, gives sonic emphasis to the terror and confusion of Achilles' victims. At the end of the passage, the groans of the dying rise with assonance on ο and ω (τῶν δὲ στόνος ὄρνυτ' ἀεικὴς/ἄορι θεινομένων, ἐρυθαίνετο δ' αἵματι ὕδωρ), accompanied, as though in the relative minor key, by repetition of υ (ὄρνυτ', ἐρυθαίνετο, ὕδωρ). The sounds in the first three lines modulate from the non-organic noise of crashing in the opening words (πάταγος and βράχε) to vocal cries at the end (ἴαχον and ἀλαλητός). This shifting towards the human, even as it mingles with the natural, also suggests that what is at stake in Achilles' struggle with the elements is an attempt to portray a rage so powerful that the "mundane" clashes of armies and warriors must morph into a struggle with natural forces.

Enraged at Achilles' violence (and at a few stunningly arrogant words),[28] the river rises against him:

> Πηλεΐδης δ' ἀπόρουσεν ὅσον τ' ἐπὶ δουρὸς ἐρωή,
> αἰετοῦ οἴματ' ἔχων μέλανος τοῦ θηρητῆρος,
> ὅς θ' ἅμα κάρτιστός τε καὶ ὤκιστος πετεηνῶν·
> τῷ ἐϊκὼς ἤϊξεν, ἐπὶ στήθεσσι δὲ χαλκὸς
> σμερδαλέον κονάβιζεν· ὕπαιθα δὲ τοῖο λιασθεὶς
> φεῦγ', ὃ δ' ὄπισθε ῥέων ἕπετο μεγάλῳ ὀρυμαγδῷ.
> ὡς δ' ὅτ' ἀνὴρ ὀχετηγὸς ἀπὸ κρήνης μελανύδρου
> ἄμ φυτὰ καὶ κήπους ὕδατι ῥόον ἡγεμονεύῃ
> χερσὶ μάκελλαν ἔχων, ἀμάρης ἐξ ἔχματα βάλλων·
> τοῦ μέν τε προρέοντος ὑπὸ ψηφῖδες ἅπασαι
> ὀχλεῦνται· τὸ δέ τ' ὦκα κατειβόμενον κελαρύζει
> χώρῳ ἔνι προαλεῖ, φθάνει δέ τε καὶ τὸν ἄγοντα·
> ὣς αἰεὶ Ἀχιλῆα κιχήσατο κῦμα ῥόοιο
> καὶ λαιψηρὸν ἐόντα· θεοὶ δέ τε φέρτεροι ἀνδρῶν.

> The son of Peleus leapt back the length of a spear's throw, his body swooping like a black eagle, a hunter, the strongest and fastest of winged creatures. He darted like an eagle and the bronze on his chest rang out terribly. He fled, withdrawing from under [the river], and the river flowed after him with a huge din. As a man leads a stream of water away from a black spring between his plants and pots, holding a hoe in his hand, removing the blockages from the channel, and as it flows forward all the pebbles are swept away and it murmurs as it runs quickly along downhill, overtaking even the one who leads it on, so did the rave of the river perpetually catch up with Achilles, even though he was fast. Gods are more powerful than men.[29]

In the struggle between Achilles and the river the epic becomes overtly

figurative, the cosmic upheaval of natural forces embodying the violence of its central hero. And from the coalescence of sound and song arises a disruptive interference between the singer's voice and the represented story world. In the way it amplifies what language brackets off, this passage intensifies and transfigures poetic technique, taking it into uncanny realms that destabilize concepts of order and civilization.

This is made clear in a curious and surprising simile. In a manner reminiscent of Sappho's bubbling brook, Scamander is like an irrigation trench in which the water gently murmurs (κελαρύζει) as it runs down the slope. Ancient commentators noted the disjunction between the violent narrative and the bucolic simile that accompanies it.[30] As the major river in the vicinity of Troy, it must have played a central role in the life of the city at peace. But the rising of the Scamander is a moment of extreme and climactic violence. The dissonant simile forges a link between the river and the hero who fights it. Like the river, which rises up with supernatural violence and yet is compared to a gentle irrigation trench, Achilles is both the highest expression of the warrior ideal and its terrifying excess; he defines, exemplifies and proves its impossibility. There at that eddying point of conflict, where the post-linguistic resonances of art emerge from the vibrations of language, is auditory philology.

1 Portions of this chapter are repeated from Gurd (2016), with the generous permission of Fordham University Press, and will be republished in Gerhard Richter and Ann Smock (eds), *Give the Word: Responses to Werner Hamacher's "95 Theses on Philology"*, forthcoming from University of Nebraska Press.

2 Lucier (1969).

3 "For the modernist poetics of the Americas", wrote Charles Bernstein in 2009, "the artifice of accent is the New Wilderness of poetry performance, that which marks our poetries with the inflection of our particular trajectories within our spoken language… . Performance is an open wound of accentual difference from which no poet escapes. This is not the accent of stress but accents of distressed language, words scarred by their social origins and aspirations" (Bernstein 2009: 146).

4 Sappho fr. 2 LP (text is from Campbell 1982). Discussed in this series by Butler and Purves (2013: 4–5).

5 Sappho fr. 31 D-P. On this frequently discussed poem, see Segal (1998: 43–62); Lanata (1996: 22–5); Winkler (1996: 98–101); Carson (1986: 10–17).

6 Segal (1998: 50).

7 Segal (1998: 54).

8 Massumi (2002: 14).

9 Goodman (2010: 48).

10 See Hamacher (2011: 20, 21, 22).

11 Jacobson (1960: 358).

12 Jakobson (1960: 371–2).

13 Jacobson (1960: 372).

14 Compare Butler (2015: 115), "Like the edge that joins two sides of the same coin, the voice defines both language and sound because it delimits them, not in some final sense but in a way that sends that coin endlessly flipping: the voice is whatever pulls sound toward language, and vice versa".

15 Attridge (1984: 1131).

16 Attridge (1984: 1135).

17 Hamacher (2011: 54).

18 Hamacher (2011: 46).

19 I find inspiration for these remarks from Daniel Heller-Roazen's insightful reading of Werner Hamacher. Heller-Roazen (1999: 29–32).

20 I explain the significance of "figures" as a modality of reading in Gurd (2016: 12–13).

21 Derrida (2003).

22 Rutherford (2000a).

23 Rutherford (2000: 90).

24 Quignard (1997). Another return to the beginning: in 1997, the first year of my PhD programme, I read Quignard's *La haine de la musique* (1996; trans. 2016), for the sole reason that it could be bought for an affordable price in downtown Toronto. The first half of that book embodied everything I wanted from an author writing about classical antiquity – and yet it was completely alien to anything I recognized as licit in the academic disciplines I had chosen to pursue. That led, quite naturally, to a kind of suppression. The book stayed on my shelves, but disappeared from my thought – and now, with a translation appearing in 2016, I return to it and recognize in it an early and perhaps the greatest work on ancient sound, not only in a historical but also an absolute sense. My book *Dissonance* (Gurd 2016), is an unacknowledged (unrecognized by me, at the time) attempt to wrestle with what Quignard had to say. I plan to say more on Quignard elsewhere. On Quignard and philology, see Hamilton (2009).

25 See *Iliad* 4.455 for the simile of spring rivers crashing together in a gorge, used to describe the Achaean and Trojan hosts coming together. In Aeschylus' *Seven Against Thebes* the Argive army outside the gates roars like a wave (115); later the image recurs as waves of misfortune around the city's stern (720). The sound of horses becomes the din of a river at *Seven Against Thebes* 86.

26 When Achilles stands on the ramparts of the Achaean fort to show himself to the Trojans in book 18, he shines like fire and shouts. Athena's own, terrifying voice is mingled with Achilles', and the latter's cry strikes immediate terror into the hearts of those who hear it (18.217–19). The panic it causes costs twelve lives, as men die amid the confusion of their horses (18.230–1). In book 19, the gods enter the battle with a shouting match that quickly escalates to the shaking and rumbling of earth and heaven. First Athena appears on the side of the Achaeans and shouts (beside the roaring sea; 20.48–50) then Ares, on the side of the Trojans, shouts back from the top of the citadel in a high pitch (20.51–3). Now Zeus thunders (20.56) and Poseidon shakes the earth with such a great noise that it causes Hades to cry out (20.57–66). Next comes the sequence I discuss here.

27 *Iliad* 21.9–21. I cite from Allen and Munroe (1920).

28 Iliad 21.184–199.

29 *Iliad* 21.251–64.

30 *Iliad* 21.261. See Richardson (1993: 74) for ancient commentators who noted the contrast between the simile and what it describes.

12
Sounds of the stage

Sarah Nooter

In Aristophanes' *Frogs*, Dionysus and his servant Xanthias hear an unfamiliar and undefined sound ("some noise", *psophou tinos*, 285) and react with cowardly displays of panic: each thrusts the other in between himself and the presumed danger, and, finally, in a scatological crescendo of fear, the god of theatre soils himself.[1] What sort of sound would be imagined as having this visceral and humiliating effect? And was this sound enacted or simply suggested by the actors' embodied reactions? Such questions cannot be answered definitively these many centuries later, but even asking them can draw attention to an important if lost aspect of ancient performance. This chapter examines the emanation of sounds from the ancient Greek stage: not sounds created offstage or by contraptions (which almost certainly occurred, especially to connote external threats), but those that came from the actors and chorus, most often when language broke down into nonsense. I focus particularly on comical instances of nonsensical vocalizing in two plays of Aristophanes and in Sophocles' satyr play, *Searchers*, as against more harrowing moments of breakdown in Aeschylus' *Agamemnon* and Sophocles' *Philoctetes*, so as to consider the range of theatrical effects and implications that such vocalizations might have.

Before I come to drama itself, let me pause to consider what is at stake in such instances of voicing from an ancient perspective. Plato's dialogues suggest that the act of mimetic voicing has a profound effect on those who hear these voices but an even greater effect on the person who gives voice.[2] His many objections to poetry, and especially drama, arise in part from his belief that what we utter makes us what we are, moulding not only our thoughts, but also our voices and bodies. He writes as much, ventriloquizing through Socrates as

usual, in the *Republic*:

> Or have you not perceived that imitations (αἱ μιμήσεις), if they persist onwards from youth, settle into characters and nature in body and voices (φωνάς) and even in thought? Yes, even so, he said.
>
> (395d1–4)

The idea here is that voicing, in the form of repeated imitations (*mimēseis*) has power over the person who is voicing by impressing itself upon his character, indeed by changing him. It is this power of the voice (when used for false voicing) that makes it so dangerous to a person's moral being, and a list follows of the people and things that must not be imitated by citizens of the ideal city, lest these citizens be influenced badly by such vocal pursuits. The list includes women of all sorts (those who are wrangling, defying their husbands, boasting, lamenting, sick, in love or in labour), slaves, men who are inferior in character (including cowards, drunkards and madmen) and finally workers (such as smiths, other craftsmen and rowers of triremes).[3] The list of prohibited voices is capped by those of non-humans, including both natural phenomena and animals:

> What then? Neighing horses and bellowing bulls and babbling rivers and the howling sea and thunder, and all such things – will they imitate (*mimēsontai*) them?
>
> No, rather these will be off limits to them, he said, both to be mad and to act like madmen.
>
> (396b5–9)

Since it is vocal imitation that admits of these problematic sounds, only the very debased poet (the one who is "quite trivial", *phauloteros*) privileges it over narration to begin with: "and so his style of speaking will derive entirely from imitation in voices and gestures, or will contain just a little bit of narration" (397b1–2). Such sounds, then, really ought not to be espoused by the human voice (*phōnē*) or the body by way of gestures (*schēma*). If they are to be admitted to poetry at all, they should be distanced through the filter of "narration", an element entirely missing from drama, whose absence renders it substandard and indeed dangerous (cf. 394b–c). In other words, the terrible power of drama arises from its use of false voice, voice that is not distanced from the speaker's identity through narration, and further from the potential for this voice to be deployed without *logos* (speech) in the form, for instance, of a bull roaring. And this is the crux of the (or a) problem for Plato. We have voices no less than (other) animals, and with many of the same capabilities as theirs. Without the intervention of *logos* or the distance lent by narration, our "body, speech and thought" (395b3–4) may easily descend to the level of beasts, with our souls tumbling down.[4]

To the dismay of Plato, Athenian playwrights did at times compel their actors to imitate animals' voices onstage and called for other vocalizations that are either lacking in *logos* or pointing away from *logos* in meaning and effect.[5] In the *Laws*, Plato's Athenian Stranger excoriates such playwrights, accusing them of filling their poetry with "cries of beasts and men, clashes of instruments, and noises of all kinds". The Muses, he asserts, would never combine the "voices of beasts and men" (θηρίων φωνὰς καὶ ἀνθρώπων, 669c–d), whereas "human poets" who "senselessly weave together and completely confound" these elements make laughingstocks of themselves and destroy music in their desire for a "beast-like voice" (φωνῆς θηριώδους, 669e). If to Plato (or to his speakers), the effect of this non-linguistic voicing is at best clownish, and at worst fatally corrupting, what is the counter-argument implicit in the use of such voices in Greek comedy and tragedy? What is gained when *logos* is lost?

Aristotle echoes Plato, but with less apparent anxiety, in commenting that animals and humans share the capacity for voice but not language. Aristotle more sanguinely notes that even if some animals have voices, as he declares in the *Politics* (1253a), human voices are different from those of animals in that we use our *phōnē* (voice) to express *logos*. If Aristotle's perspective on animal utterance as lacking in language but still possessed of "voice" can be taken as broadly representative of ancient views, then we can see how the use of animal vocalization onstage could be a way to highlight aspects of voice outside of its linguistic capacities: from animals, and from humans at times, vocal sounds emerge as embodied, meaningful and especially expressive, and the more so when it is non-linguistic.

Non-lexical onomatopoeia is one example of the kind of staged vocalization that reduces language to sound, the kind that especially bothers Plato. Such onomatopoeia is defined by Derek Attridge as "the use of the phonetic characteristics of the language to imitate a sound without any attempt to produce recognizable verbal structures".[6] This category includes, for instance, mimicry of a dog barking (in Greek, that's *bau bau*). These non-lexical sounds sit at one end of a spectrum, the far end from the complex, hypotactic structures that are often associated with poetic language in fifth-century Athens. Both vocal poles are present in drama and much happens in between. Such a broad vocal spectrum allows playwrights to work with a great range of conceptions of human life and to pay particular attention to life on the edge of human experience; there is predictably both delight and despair to be found at these extremes, both verity and fragility.

Comedy and satyr plays

What we have of Aristophanes' forays into the field of voice-as-sound gives us a sense of the comic possibilities. One suggestive example comes from the *Birds*, by way of a character who is a hoopoe. This bird is also a speaking character with a chequered mythical past as a former human king named Tereus. Early in the play, he summons other birds, the ones who will constitute the chorus, onto the stage in song:

> Επ. ἐποποποῖ ποποποποῖ ποποῖ,
> ἰὼ ἰὼ ἰτὼ ἰτὼ ἰτὼ ἰτώ,
> ἴτω τις ὧδε τῶν ἐμῶν ὁμοπτέρων (227–9).

> Hoopoe: *epopopoi popopopoi popoi*,
> *iō iō* come [*itō*] come come come,
> let someone of my fellow feathered friends come!

> Επ. δεῦρο δεῦρο δεῦρο δεῦρο.
> τοροτοροτοροτοροτίξ
> κικκαβαῦ κικκαβαῦ.
> τοροτοροτοροτορολιλιλίξ (259–62).

> Hoopoe: Hither [*deuro*], hither, hither, hither,
> *torotorotorotorotorotix*
> *kikkabau kikkabau*
> *torotorotorotorolililix.*

Aristophanes plays with the notion of the birds' foreignness to speech and with the expectations of the audience as he bats the hoopoe's voice back and forth between speech and nonverbal song.[7] Initially, the hoopoe seems merely to repeat his own name, performing its onomatopoetic nature, but these noises are very quickly revealed to be metrically correct and to turn into something linguistically coherent ("come!"), with the sonic effects of the repetitions here also greatly enhanced by the marked metrical variety of the hoopoe's song.[8] The hoopoe's soundplay with his own name also echoes a Sophoclean pun on the Greek word for hoopoe with the word for "observer" in his tragedy *Tereus*: "that hoopoe, observer of his own evils" (τοῦτον δ' **ἐπόπτην ἔποπα** τῶν αὑτοῦ κακῶν, *fragment* 581), an instance of aural wordplay that is unusually blatant for tragedy.[9] In *Birds*, then, the sound of the hoopoe's chirps not only mimics his own ornithological name and performs with metrical skill, but it also alludes to the tragic incarnation of the shape-shifting Tereus, who becomes a hoopoe through the intervention of the gods.[10] The hoopoe's history of shifts in identities, dramatic genres and lifeforms is thus signalled by his shifts between broken vocalizations and decipherable language.

The hoopoe's next summons switches from coherent Greek (*deuro*, 259) to incomprehensible avian chirps (*toro*, 260) with echoing ease, and rounds off with a sharp *x* sound (*tix*, 260) that connotes a nonverbal sound in Aristophanic comedy. The song veers farther and faster into mimicry of bird sounds, from *tix* to *kikkabau* (261), which an ancient scholiast thought was intended to imitate the sound of an owl. This part ends with the sound *lililix* (262), which has been considered a fair attempt at a bird's cry. At the same time, however, the song cuts against straight mimicry with its formal poetic qualities, since that *lililix* is a perfect anapest that rhymes very nicely with *tix*.[11] Thus the hoopoe's patterns of song and speech again imply that he is caught between his original human nature (97–8) and his new avian identity (103), drawing as it does both on avian sounds and metrical sense.[12] Peisetairus, the hero of the play, claims that this bivalent identity is an advantage (at least to himself) and explains to the hoopoe, "you think all the things that man thinks and as many as a bird thinks" (119). In much the same way, the birds who come to constitute the chorus have been taught the Greek language (199–200), but are still birds, as their chirpy patterns of speech demonstrate:

> Χο. ποποπο

power on par with humans and, ultimately, with gods.

A more complex example of aural, animal nonsense comes from Aristophanes' *Frogs*, a play famous for its focus on the powers of the stage and freighted with influence in the history of literary criticism. This play bears the unusual feature of having two consecutive choruses, with the first one constituted by the souls of "swan frogs" (*batrachōn kuknōn*, 207). Although they are known more commonly as simply "frogs", their literal designation as swan frogs – of which there is no such thing – points to the joke of their presence, which is strictly aural: these frogs probably were heard but not seen, and thus known only through the sound of their song;[14] they proclaim themselves to sing beautifully in the manner (implicitly) of swans, but they are interpreted by Dionysus, the play's hero, as croaking disagreeable gibberish.[15] When they sing in full sentences, their song is about the gods, activating the divine connotations of music; when they croak in a nonsensical mishmash of syllables, their sounds strike the ears (of Dionysus at least) as dissonance from the maws of beasts. Some of the humour in this scene obviously arises from the juxtaposition of highhanded musical rhetoric and croaky noise: language and voice at play.

This chorus appears for just one brief interlude, the crossing of Dionysus to the far shores of Hades. Charon, chauffeur to the newly dead, presents the song of these frogs as a solution to the problem of Dionysus' self-professed inability to row the boat, which he claims with the declaration that he is "inexperienced, unseafaring, and un-Salamised" (***a**peiros**a**thalattōs**a**salaminos*, 204), a line whose combination of assonance, anaphoric alpha-privatives and asyndetonic tricolon of ascending silliness may signal the movement from representational sense into significant, if absurd, sound. Charon replies to Dionysus that it will be easy for him to row, for as soon as his oar strikes the water, he will hear "most beautiful songs" (*melē kallist'*, 205–6). Charon then identifies the "swan frogs" as the singers of these songs. This joke rests on the fact that song was actually used to regulate the rowing of triremes.[16] Song is, at its most basic, the combination of rhythm and melody, and an even rhythm – all apart from melody, soundplay or words – can have the literal effect in the world of compelling the acts of many men to fit together, and fitting men into the world.[17] Charon signals the frogs' coming descent from linguistic sense into nonverbal voicing with his own final utterance before the frogs' song – *ō op op, ō op op* (208) – a line that is probably best not rendered into English, although one translator has suggested smartly, "heave ho, heave ho!"[18] Rhythm is on display (for lampooning) here as well as the power of the voice through rhythm to organize, spur and here also simulate movement.

Obligingly, the frogs chime in.[19] The first, second and final line of their opening lyrical utterance is *brekekekex koax koax*[20] (209, 210, 220), and this

line is repeated throughout the call-and-response song between the frogs and Dionysus that follows. Dionysus is presented as an unhappy participant, both in the rowing and as an audience to the song of the frogs, and responds to the frogs with ever-more irritated cries of frustration (221–2, 226–7, 236–8, 240–1).[21] His complaints on the pain in his bottom caused by rowing interweave neatly with his complaints on the annoying sounds of the frogs. The frogs continue blithely with their song, emphasizing its musical qualities (ξύναυλον ὕμνων βοάν, 212; ἐμὰν ἀοιδάν, 213–14) and promoting it as "sweet-sounding" (*eugērun*, 213). They then engage in some name-dropping to puff up their divine connections, claiming to have sung in a festival for Dionysus himself (215–16), an odd note, given that they now sing to such a disgruntled Dionysus onstage. They suggest, further, that they are beloved to the "lyre-loving Muses", to "hoofed Pan who plays the tunes of the reeds", and to "the harpist Apollo", because of their stewardship of the marsh reed, a physical necessity for the instruments of these gods (229–34), thus comically rooting their musical value in the material of the marshes.[22]

Dionysus and the frogs are paired off as antagonists in a sonic battle. After cursing their *koax* and begging them to stop, Dionysus hits upon a new solution: he vows that he will "take" their song from them (τουτὶ παρ' ὑμῶν λαμβάνω, 251). He then assumes the frogs' cry of *brekekekex koax koax* and sings to them in triumph that he will conquer them with the *koax* (τῷ κοάξ, 255) and forever keep them from the *koax* (ποθ' ὑμᾶς τοῦ κοάξ, 268). Thus Dionysus completes his transformative domestication of the non-lexical sound *koax* into a word *koax*, which metonymically represents the whole song and sound, indeed the whole existence, of the frogs.[23] In effect, he turns the non-linguistic sound of *koax* into a perfectly semantically acceptable noun: voice, in his vocalization, becomes language. Dionysus manages this transformation at the same time in the play that he starts to come into his identity and powers as a god, indeed as the god of theatre and all such staged vocalization.[24] To beat the frogs is to conquer sound with speech.

Compared to the mimicry of animal sounds, mere non-lexical expressions of emotion can appear deceptively simple. People commonly make such sounds, after all, and it is the role of drama to mimic the habits of life. But Sophocles' *Searchers*, a satyr play, shows that such nonverbal expressions tend to appear when the poet is bringing attention to capacities of voice and sound in other ways. A fragment from this play provides some basic examples of emotional utterances, including ejaculations of surprise, *hoo hoo hoo hoo* (131), and nearly unpronounceable expressions of fright *hoo hoo hoo ps ps aa aa* (176), both from the chorus of satyrs. These kinds of vocalizations are indexes of not only emotions but also internal, bodily affairs; as such, they are sometimes called "corporeal sound symbolism". They include everything from apparently

spontaneous cries of emotion and the acoustics of digestion (burps, hiccups, farts).[25] Satyrs are, above all, corporeal beings, known for their addiction to bodily pleasures, like drink and sex, proclivities that are physically marked by their prominent phalluses. The physicality of their language is underscored when they are ridiculed by their father, Silenus, who suggests that they "shouting in this cowardice, will fart" (κλαίοντες αὐτῇ δειλίᾳ ψοφήσετε, 168), using a verb *psopheō* that connotes farting here, but generally just means to make sounds.

The occasion of the satyrs' panic makes their would-be farting all the more comic and absurd. Their alarm, and the sounds that express it, are provoked by their hearing the song of the newly invented lyre; as they learn more about this auditory sensation, the vocabulary they use to describe the music of the lyre changes: first a "sound" (*psophos*, 144, 145, 204), it is later referred to as a "divine voice" (*thespin audan*, 250), and then as the "voice of a dead creature [i.e. the tortoise]" (τοῦ θανόντος φθέγμα, 299; θανὼν γὰρ ἔσχε φωνήν, 300; θανόντι θηρὶ φθέγμ', 328). Finally, when the satyrs understand the sound, they pronounce it an *omphē* (329), a word for divine voice used exclusively of authoritative utterance.[26] Thus the chorus' earlier, inarticulate vocal emissions – their *hoo hoo hoo*s and such – not only result from but also draw attention to the birth of a new sound, lyric music, that is imagined as born from a death, transforming a body from silent and bestial to melodious and divine. The satyrs, beastlike themselves, bring the corporeal, excretory side of sound onto the stage just as the divine lyre can also be heard and, perhaps, undercut by the vocalizations of the body. Yet at the same time as these low, corporeal emissions are juxtaposed with the melodies of the lyre, the lyre itself is posed as a double-juxtaposition of voice: a divine sound sings from a dead, previously dumb beast, and an inarticulate child makes song blossom through the land.

Tragedy

In tragedy, predictably, the role of nonverbal vocal sounds diminishes and imitations of animal sounds are almost never found, although there are nonetheless hints of proximity to the animal world whenever vocal nonsense intrudes. Here the reduction of voice to nonsense supplies a way to convey the razor-sharp edge of human experience: suffering that is so extreme that sufferers depart from the realm of representational language.[27] Unlike the mimicry of birds' songs or frogs' croaks, these expressions are not icons or imitations of anything; rather, they are indexes of pain in the broken voices of characters who are otherwise pointedly articulate. This departure from verbal

language becomes the most revealing aspect of such passages, the very fact that the speaker cannot maintain the business of grammatical, lexical constructions, or manages to return to language only by force of a repressive will. They are drawn into the sonic material of vocalization to display the materiality and indeed the mortality underlying their embodied existence.

In Aeschylus' *Agamemnon* the audience is confronted with the sounds of an anguished and incisive lack of articulation when Cassandra begins her song with stuttering cries of grief. These cries, however, soon metamorphose into addresses to Apollo and then become a still echoing, but now lucid, statement of despair:

> ὀτοτοτοτοῖ πόποι δᾶ·
> ὤπολλον ὤπολλον.
>
> ὀτοτοτοτοῖ πόποι δᾶ·
> ὤπολλον ὤπολλον.
>
> ὤπολλον ὤπολλον,
> ἀγυιᾶτ', ἀπόλλων ἐμός·
> ἀπώλεσας γὰρ οὐ μόλις τὸ δεύτερον (1072–3, 1076–7, 1080–2).
>
> *Ototototoi popoi da!*
> O Apollo O Apollo
>
> *Ototototoi popoi da!*
> O Apollo O Apollo
>
> O Apollo O Apollo,
> god of avenues, my Apollo.
> You have destroyed me, all the way and again.

This progression of sound into sense is not dissimilar to the one performed by the hoopoe and the chorus of birds in Aristophanes' *Birds*. Cassandra's cries of *popoi* (1072, 1076) fade into the coherent "O Apollo" (1073, 1077, 1080), and then to "*my* Apollo" (*apollōn emos*, 1081), which transforms again to the stark verbal declaration "you have destroyed me" (*apōlesas*, 1082). The first two lines are repeated as an echoing refrain of *ot*, *op*, *poll*, but these sounds shift from nonsense into meaning, with the name "Apollo" significantly sounding like, and then denoting, "you [who] destroyed me". The birds' soundplay in Aristophanes comedy is played for laughs; this one shows with searing clarity Cassandra's movement from the terrifying interiority of her mind to the lucidity of conversant language.[28]

These utterances occur soon after Clytemnestra suggests that Cassandra must have only an "unknowable, foreign voice in the manner of a sparrow" (1050–1). Somewhat later, Cassandra calls herself a nightingale who pronounces the name of her lost son, "Itys, Itys" (1140–5), a name whose sound has itself become a symbol of grief. There is some play in these moments with the idea that Cassandra is more animal than woman, more a maker of sound and song than a speaker of speech. Indeed, Cassandra is commonly understood to dwell at a focal point between identities: unmarried maiden and yet consort (to Apollo, Agamemnon and Hades), prophetic yet pathetic.[29] Later in Aeschylus' rendering, the paradoxical nature of her identity is performed also through the ambiguities available in language, as her words are revealed to be frustrating riddling yet incomparably fluent in lyricism and metaphor. Aeschylus thus makes use of the edges of *logos* – on the side of the nonverbal and on the pole of the poetic – to allow voice to surface. Although this breaking in the skein of *logos* occurs at desperate moments in Aeschylean tragedy and other dramas, it reveals an ongoing state of vulnerability that is intrinsic to mortality itself.

Sophocles' *Philoctetes* is also at his most expressive when his language dissolves into mere sounds. He is also one of the most vocally variable of tragic characters, capable of expressing his position in a panoply of speech, song and marked linguistic devices.[30] Yet he is never more striking a stage-presence than when his language breaks down into the apparently non-lexical, as in the following passage:

> Φι. ἆ ἆ ἆ ἆ.
> Νε. τί ἔστιν; Φι. οὐδὲν δεινόν. ἀλλ' ἴθ', ὦ τέκνον.
> Νε. μῶν ἄλγος ἴσχεις σῆς παρεστώσης νόσου;
> Φι. οὐ δῆτ' ἔγωγ', ἀλλ' ἄρτι κουφίζειν δοκῶ.
> ἰὼ θεοί.
> Νε. τί τοὺς θεοὺς οὕτως ἀναστένων καλεῖς;
> Φι. σωτῆρας αὐτοὺς ἠπίους θ' ἡμῖν μολεῖν.
> ἆ ἆ ἆ ἆ.
> Νε. τί ποτε πέπονθας; οὐκ ἐρεῖς, ἀλλ' ὧδ' ἔσῃ
> σιγηλός; ἐν κακῷ δέ τῳ φαίνῃ κυρῶν.
> Φι. ἀπόλωλα, τέκνον, κοὐ δυνήσομαι κακὸν
> κρύψαι παρ' ὑμῖν, ἀτταταῖ· διέρχεται,
> διέρχεται. δύστηνος, ὦ τάλας ἐγώ.
> ἀπόλωλα, τέκνον· βρύκομαι, τέκνον· παπαῖ,
> ἀπαππαπαῖ παπᾶ παπᾶ παπᾶ παπαῖ… .
> οἶσθ', ὦ τέκνον; Νε. τί ἔστιν; Φι. οἶσθ', ὦ παῖ; Νε. τί σοί;
> οὐκ οἶδα. Φι. πῶς οὐκ οἶσθα; παππαπαππαπαῖ (732–45, 753–4).

Phi. *a, a, a, a!*
Ne. What is it? Phi. Nothing terrible. But go, O child.
Ne. Are you having some pain from your ever-present disease?
Phi. Not at all, not me, but I suppose I just got a little light-headed.
Iō gods!
Ne. Why, then, moaning do you call upon the gods?
Phi. So that they may come as gentle saviours to us.
a a a a!
Ne. What on earth are you suffering? Will you not answer, but only
be silent? You seem to be in the midst of something terrible.
Phi. I am destroyed, child, and I will not be able to hide
this pain from you, *attatai*! It cuts through me,
it cuts through me. Miserable, O, I am wretched!
I am destroyed, child. I am being eaten alive, child. *papai*,
apappapai papa papa papa papai!
Do you understand, O child? Ne. What is it? Phil. Do you understand, O son?
Ne. What's happening to you?
I don't understand. Phi. How can you not understand? *pappapappapai*!

The extreme quality of Philoctetes' suffering is expressed by his inability to suppress an incredible series of shrill sounds. How shocking would these sounds have been to an Athenian audience? How much a break from sense and metre? The opinions of different editors of this text are instructive here, for we see the limits of our ability to answer even these most basic questions. Seth Schein asserts that Philoctetes' cries of *a a a a!* are *extra metrum*, or unmetrical (given that all tragedy is metrical, that constitutes a departure), but T. B. L. Webster insists that they form "segments of an iambic line",[31] and prints the text accordingly. These editorial choices themselves indicate different notions of the limitations of vocal expression in Greek tragedy.

All commentators agree that the most notorious series of cries, *papai,/ apappapai papa papa papa papai*, is also perfectly iambic, but Richard Jebb and Schein both tease out more complex forms of sense from this senselessness, with Jebb connecting the four final *papa*s into an unbroken string and noting that, if read this way, the sounds form an ascending tricolon of agony.[32] Schein, for his part, draws attention to how Philoctetes' cries of *papai* fit with the language and themes of the play: "Phil[octetes'] cry … conspicuously reiterates sounds suggesting παῖς 'child' and - 'papa' ".[33] Yet this interpretation threatens to suppress the destruction wrought on language in this passage and the complementary drawing of attention to the sonic material of Philoctetes' voice. A listener, no less than a commentator, may well be

tempted to try to piece logical meaning back together from these broken syllables. What results is a variety of plausible ways of reading and experiencing this vocal flight that invite further questions: is Sophocles showing how pain compels speakers to shatter the boundaries of sense and turn to the expressivity of nonsense or that, even in this break from sense, the semantic and poetic structures of sense-building remain intact? Either way, *Philoctetes* allows the audience to dwell in the sonic experience of voice overwhelming language, hearing its materiality as expressed by several series of popping labials in which one probably can hear the words father (*pappas*) and child (*pais*) that will lead the protagonist back to coherence and, ultimately, back to society through his paternal and filial relationships with other characters.

Such sonic expressions in tragedy reveal an ongoing state of vulnerability that is intrinsic to mortality itself and reminds audiences that semantically rich locutions can dissolve into the babble of vocalization at any time: a babble that has no Aristophanic glee about it at all. And yet there is a point of connection between the gibberish of Aristophanes and the cries of tragedy, as can be seen particularly in the case of Philoctetes. For Philoctetes, at his most distraught, screams like a beast in pain, but also, as Schein notes, like a baby calling for its father: *papa papa papa papa*. These are the very syllables earmarked by Theophrastus some hundred years later as a paradigmatic manner of conversing with an infant, with the *p* sound standing out most prominently in the Greek: ποππύζων καὶ '†πανουργῖ† τοῦ πάππου' καλῶν ("saying hush and calling [it] papa's knave …" *Characters* 20.5). In fact any string of repeated syllables might call to mind the babble of babies, for whom voicing chains of repeating syllables is a standard method of language acquisition.[34] Babies of course do not speak words, but only utter sounds. This state of infancy contains both a capacity and lack that we lose as we acquire language, with our ability to decipher and produce phonemes radically diminishing in the first months and years of life.[35] Alongside our babble in infancy is a complete alignment of body and self, with nary a dishonest or evasive utterance escaping our infantile mouths. This alignment of body, voice and truth is, as we know, completely lost later in life, a loss that perhaps allows for the sense of fascination or even longing likely felt in the staged presence of inarticulate human voices: the dissolution of linguistic sense into its sonic parts.

Conclusions

Is babble, nonsense and gibberish, then, always just below the surface of language or is it the sound of something lost? I have been writing of *logos*-less

vocalization as an ever-present potential, but it may also remind us that there is in fact nothing truly ever-present about us. By the time a person is able to notice that babble, or non-lexical communication, exists in a separate sphere from semantically communicative language, he is no longer a baby himself and is rarely called upon to produce or take notice of voice apart from language. Thus babble, pure non-semantic *phōnē*, is more often observed than emitted by those who do observe it: it is largely a capacity of our children, not of our grown selves. It represents a stage that we have lost, and that we understand as (usually) fleeting. One is reminded of Mladen Dolar's evocation of infant and parental communication, in which he notes that babies do not only imitate adults, as is so often suggested, but rather "the opposite: adults imitate children, they resort to babbling in what is no doubt a more successful dialogue than most".[36] What makes such co-babbling seem "successful" is the sense that one has gotten beneath the evasions and circularities of language, dug down to a Rousseauian ideal of pure communication, pure existence and pure being that cannot last. Aristophanes, clearly aware of the attractions of pre-verbal communication, has his character Strepsiades, father of an adult son, reminisce nostalgically about just such an exchange in *Clouds*: "whenever you said *bru*, I understood and would offer something to drink. When you asked for *mamma*, I would come bearing bread" (1382–3). In *Clouds* this striking and even touching memory of perfect communication arising from the half-baked, childish vocalization of sounds contrasts sharply with the mess of meanings made by the sophisticated methods of rhetoric (*logos*), which are personified and skewered later in the same play.

Paying attention to these vocal sounds in drama is, at its most successful, a means of recovering the elements of the sonic experience of being in an ancient audience. An audience is a body (that is usually also a plurality of bodies) that *hears*, thanks to its origin in the Latin word *audio* (hear).[37] Although this chapter has been about sounds – largely the sounds of voices – the mandate demanded by these voices is to be heard. If we cannot now literally hear these voices, we can at least briefly, imaginatively inhabit the space of having heard them and then stopped hearing them, as any actual audience would. Drama offers its audience the corporeality of actual people on a stage with the fleeting temporality of existence.[38] Its offering of presence and forthcoming absence can be heard as sound turning into silence.

1 "*Xanthias*: Indeed, by Zeus, but I hear some noise. *Dionysus*: Where, where is it? *Xanthias*: From behind – *Dionysus*: Get behind me now!" (Ξα. νὴ τὸν Δία. καὶ μὴν αἰσθάνομαι ψόφου τινός. / Δι. ποῦ ποῦ ’στιν; Ξα. ὄπισθεν. Δι. ἐξόπισθέ νυν ἴθι [285–6]). Scatological repercussions follow. There are points of convergence between the argument in this chapter and those in Nooter (2017), where these issues are explored at greater length.

2 Plato's objections to the influence of poetry in this light are well known. He is equally

displeased by the power of oratory in this light, as he suggests through Socrates' ironically rhapsodic description of funeral orations in the *Menexenus* 235b–c. I am grateful to Demetra Kasimis for drawing this connection.

3 Plato, *Republic* 395d5–396b7.

4 Plato's Socrates attends also to other aspects of mimesis and song that are to be purified for use in the ideal city, like "rhythms", which must be "orderly" and "manly" (*Republic* 399e). I draw attention here to the part of the argument that particularly pinpoints the damage done to the vocal imitator as opposed to the listeners of such an imitation. Cf. Lear (2014: 244) for a helpful account on Plato's problem with poetic voicing as concerning "not only how poems make the world appear but also whose voice it is we seem to hear". She adds, 246: "it is important to see that the inferiority of this sort of poet is manifested in the multiplicity of his imitation itself and not especially in the fact that any particular character he portrays is bad… . The reason only a decent person is in a position to have a uniform voice is that he is the only person with a unified soul".

5 All this is on top of the problem that these voices are not truly speaking from the actors' souls in any case.

6 Attridge (1984: 1120). See Gurd in this volume for further thoughts on Attridge's theory of onomatopoeia.

7 Perkell (1993: 2) suggests that the birds' music also "embodies a standard of beauty in nature, absolute and transcendent, which functions as an ideal to which some poets aspire". If this is so, then Aristophanes had more than one reason for making sure the birds sound different from men.

8 Dunbar (1998: 156–7) is dubious about the metre at the ends of lines 227 and 260, however. Cf. Payne (2010: 93) on this passage and Bettini (2008: 142–3) who suggests that these lines invite the audience to hear the hoopoe's song as if they themselves (the audience) were birds. Cf. Parker (1997: 297–303), who points to the "virtuoso compositions" here combined with the use of literary allusion and an extraordinary range of metres: "within its thirty lines every type of metre is represented, except choriambic" (302). Daitz (1997: 313–14) observes that this metrical variety matches the variety in appearance of the birds, since each one is imagined as a different species. Cf. Payne (2013: 46–9) for a discussion of the sounds and staging of communication between humans and non-humans in this passage.

9 Aristotle, *History of Animals* 633a17 attributes this passage to Aeschylus, but modern editors do not agree. Cf. Lloyd-Jones (1996: 292). There is also a less subtle allusion to Sophocles' play a bit later (100), which indicates that Aristophanes surely had the tragedian's play in mind.

10 Bettini (2008: 142) points to how various forms of soundplay performed by Peisetairus on the name of the hoopoe make use of the word for child (*pais*) and other similar sounds; this punning prepares the audience for the more extreme sound symbolism yet to come in the hoopoe's song.

11 Cf. Dunbar (1998: 164–5) for precise ornithological and metrical observations.

12 Dunbar (1998: 129) notes that the hoopoe's answer to the question of why his wings are missing moves from a third-person description of how birds moult to a first-person assertion of how their feathers grow back (105–6) and suggests that this grammatical change bespeaks a "mental shift" in the hoopoe as well.

13 Cf. *Birds* 807–8, for Peisetairus' token acquisition of wings.

14 So says the scholiast: this chorus, according to him, was not seen onstage. If this is so, however, it is not clear how this scene might have been staged. Ford (2011: 353) argues that this chorus is one and the same as that of the initiates who appear just a little later. Willi (2008: 206) somewhat similarly sees the chorus of frogs as the counterpart, or opposing, chorus to that of initiates along religious lines.

15 Cf. Ford (2011: 349) on frogs' reputation as "no singers: an ancient etymology of 'frog' took βάτραχος from 'having a harsh call' (παρὰ τὸ βοὴν τραχεῖαν ἔχειν)", citing the *Etymologicum Genuinum*. Cf. Kidd (2014: 8) on "nonsense" as an "intersubjective" rather than semantic category: it is "a subjective label that arises between two parties, whether due to a communication breakdown or something else. A more appropriate definition of nonsense, then, should be 'language perceived as being unworthy of interpretation' ".

16 Cf. Whitman (1964: 249) on "the rhythm of the frogs" as that of "the victorious Athenian fleets". An example of this phenomenon is shown in Aeschylus' *Persians* 393, 395, where the Greeks' singing of a paean and blasting of a trumpet at the start of the Battle of Salamis may be understood as coordinating and encouraging the Greeks. Cf. West (1992: 28–30) on the Greeks' understanding of "the value of music as an adjunct to work and bodily movement, especially to that which is of a repetitive or rhythmical character". Also see Connelly (2011: 314) on how "[s]ound and singing reinforce motor memory, as arms and legs move to the beat of practiced notes and words" and how this understanding of song and movement allows insight into ancient Greek ritual practice as essentially kinetic. An equivalent custom is found among the Sumbanese in Indonesia. Cf. Kuipers (1999: 496), especially on the "tombstone dragging song".

17 Cf. Kant (2001: 33): "Beautiful things demonstrate that man fits into the world". ["Die Schönen Dinge zeigen an, daß der Mensch in die Welt passe".]

18 Dillon (1995). Dover (1997: 118) glosses this line with the following comment: "ὦ must go with the pulling of the oar through water, the first ὄπ with the raising of the blade at the end of the stroke, and the second ὄπ with the recovery for the next catch".

19 Stanford (1958: 92) notes that Charon has set the rowing into "4/4 time in musical terms", but that the frogs transform it into "3/4 time" when their song breaks into trochaics and iambics, and then they "make matters worse" by switching back into dactyls. Dionysus beats the frogs, suggests Stanford, by "using their own trochees against them" and then varying his rhythms unto triumph. An attractive interpretation.

20 And just what is this phrase *brekekekex koax koax*? Is it truly Aristophanes' best guess at the sound a frog makes and, as such, pure nonverbal nonsense? The frogs' *brekekekex koax koax* is immediately recognizable to even an inexperienced student of Greek as a series of non-words and, in fact, it is likely that these sounds occupied their own phonological category in Attic Greek. This observation is based on the phonological insight of Trubetzkoy (1969: 208) that "[p]honemes that … occur in interjections, onomatopoeic expressions, and in commands or calls directed toward animals … form a special part of the vocabulary, for which the ordinary phonological system is not valid". Cf. also Heller-Roazen (2008: 14–18). Dover (1997: 119) offers an analysis of these sounds that suggests that this series of sounds is in fact the purest, most distilled form of nonsense available in Greek: "Why βρ-, and why – ξ at the end? The latter seems to be a Greek spelling convention for the representation of sounds; so – τοροτίξ and – λιλιλίξ in birdsong (*Birds* 260, 262), παππάξ for farting (*Clouds* 390), and exclamations in – άξ (cf. 63). Initial βρ appears in many Greek words denoting the production of sound, e.g. βρέμειν, βρυχᾶσθαι, βρωμᾶσθαι, and even in the baby-word βρύ, 'drink', although the combination of initial stop and fricative is notoriously difficult for

infants to pronounce. βρεκεκεκέξ seems thus to embody two non-representational conventions". According to Dover, then, these sounds are nonsense, but they are conventional nonsense, emblematic of nonverbal speech. Throw them together with some emphatic and lengthening *ek*s, and you get the Platonic form of non-lexical language, the ideal instantiation of *blah blah blah*. Yet these *blah blah blah*s are also internally and externally organized in interesting ways. They are metrically sound and function as a line of lēkuthion (i.e. trochaic dimeter catalectic with a resolution in the first foot): – ~ – x – ~ –, or really: ~ ~ ~ – x – ~ –. As a frequently repeated refrain (eleven times total) these nonsense words are made communicative, enacting a dynamic of song that can be variously interpreted (as above).

21 Cf. Daitz (1997: 312) who sees Dionysus as "ineluctably hypnotized by the onomatopoeia" ["inéluctablement hypnotisé pas les onomatopées"] of the frogs' song, despite his distaste for it.

22 Cf. Porter (2010: 262–75) on the issue of aesthetic materiality elsewhere in the play. Cf. Ford (2011: 351) on the idea of "*natural* music" here, reflecting theoretical concerns of the fifth century.

23 This begins much earlier in the exchange: "but go to hell *with this very koax!*" (ἀλλ' ἐξόλοισθ' αὐτῷ κοάξ [226]). Cf. Gurd (2016: 55) on this passage. Dover (1997: 120) interprets this victory as a mix between a shouting match and a singing competition, an interpretation that makes sense in the greater Athenian context, given that Pericles had re-established *mousikoi agōnes* in the 440s and that, by the end of the fifth century when the *Frogs* was produced, we can see competitive and yet mimetic musical gestures in play in the work of Timotheus and the greater framework of New Music. Cf. Power (2010: 447, 503–4).

24 And yet Dionysus is also a god for whom inarticulate noise is appropriate, as Ford (2011: 343) notes: "Dionysos is *bromios*, the 'noisy' one, and it is reasonable that his names should sometimes stress sound over sense". Ford's overall point that Dionysus' other name, *Iakchos*, "evolved from nonsense syllables to divine name" (345), is very fitting to the way the *koax* evolves in *Frogs*. Cf. also Willi (2008: 209–10).

25 Cf. Hunter (1996: 180) and Hinton, Nichols, and Ohala (1994: 2–3).

26 Cf. Ford (1992: 175) and Nooter (2012: 170–1).

27 Cf. Loraux (2002: 59) on the cries of tragedy and on tragedy as a genre "that made weeping itself a sort of song".

28 Heirman (1975: 262) describes this progression as travelling from evocation through invocation and suggests that this process "causes Kassandra's surge out of the world of her senses to level off into a clairvoyant state". He goes on to read her vocal phrase *ototototoi* (1072, 1076) as a "stunted" or "rudimentary" form of address: "O, Thou-Thou-To Thee I pray!" (262–3). If he is correct, then there is more mimicry to these vocalizations than may at first be apparent. The richness of the language allows for many such potential meanings to emerge. The lines are iambic in some form, but there is disagreement among scholars over the precise arrangement. As Fraenkel (1950: 3.488) points out, "Terminology matters but little here. It is more important to recognize that these are four separate ejaculations, each of which, in terms of metre, may be regarded as roughly equivalent to a catalectic iambic metron". The last several lines quoted above are in agitated dochmiacs. Cf. also Bettini (2008: 160–6), who also draws a connection to the hoopoe's song in *Birds*. Cf. Judet de La Combe (2001: 2.429–31) for a highly sensitive reading of each of the three cries in 1072 and 1076. He also notes the unusual nature of *ōpollon* as a complete address to Apollo (432), which points

to Aeschylus' deliberate use of the form for its sounds.

29 Cf. Schein (1982) on the paradox of Cassandra's power and helplessness and Mitchell-Boyask (2006) on Cassandra's various bridal roles.

30 Cf. Podlecki (1966) and Nooter (2012).

31 Schein (2013: 237) and Webster (1970: 115).

32 Jebb (1906: 123): "Written as above, the exclamations represent three successive cries of pain, each longer than the last, as the agony becomes sharper; they seem to suggest the convulsive movement of the lips from which the sounds are wrung".

33 Schein (2013: 88, 237), Pucci (2003: 80), and Webster (1970: 39).

34 Cf. Thomas (2010: 196) and Aitchison (2008: 81–4).

35 Eliot (1999: 368–9).

36 Dolar (2006: 27), citing the influence of Jakobson (1965). Cf. Butler (2015: 59–61).

37 The Greek word for audience is θεατής (spectators) from the verb θεάομαι, "*behold*". As I suggest in Nooter (2017), aurality and visuality work powerfully in concert; focusing on one can accrue to the illumination of the other. Merleau-Ponty (2012: 242–4) calls attention to the "unity of the senses through the body", and writes, "in my body, visual and auditory experience, for example, are pregnant with each other, and their expressive value grounds the pre-predicative unity of the perceived world, and, through this, its verbal express (*Darstellung*) and intellectual signification (*Bedeutung*)" (244).

38 Cf. Connor (2000: 9–19).

13
The erogenous ear

Pauline LeVen

L'oreille érogène – the erogenous ear. On the one hand, the expression describes the ear as a metaphorical locus of desire.[1] On the other, the phrase itself (in the original French of Michel de Certeau, from whom I have borrowed the phrase), and its metathesis O-R-Ē > E-R-Ō enacts that process of desiring: the permutation of open and closed vowels, of o and e, and the alternation of liquid consonants (L-R-L-R) evokes the aural caress, the back-and-forth of a stroking hand, as the semivowel *-eille* (/ɛj/) mimics the opening of a mouth in the expectation of a kiss. The phrase *l'oreille érogène* creates an auditory event that, for some listeners at least, is highly suggestive of what is being described. The susceptibility of the ear to be aroused by the sounds of language is the focus of this chapter.[2]

I am less interested in describing the sonorous elements of language and their intrinsic power, what Jakobson has called "speech sounds and their tasks":[3] my interest is in the listener and how listening to the sounds of language can be conceptualized, and was conceptualized in antiquity. Rather than considering sound as the material that speech is built of, this chapter considers the sounds of language as experience and in experience. It focuses on the ever-different encounter of a sounding voice (heard out loud or on the page) and an ear, and on the unique patterns of arousal produced by the experience of listening to the sounds of language.

To investigate this question, I start from three ancient scenes representing a listener in action. These three listeners are very different from each other: one is Socrates, the second is the pair of characters Daphnis and Chloe in Longus' novel *Daphnis and Chloe*, and the third is the mythical nymph Echo. I have chosen them first because listening, in all three scenes, opens onto a myth:

either listening gives rise *to* a myth or listening happens *in* a myth. This is of crucial importance because I see myth as a place of rumination, an "island of cogitation", a locus of deep thinking.[4] These passages staging a listener are thus different from the scenes of listening that Anastasia-Erasmia Peponi for example has isolated in *Frontiers of Pleasure*, where Odysseus is described as taking stock of his divided aesthetic emotions when listening to the song of the bard.[5] The myth, in the cases I examine, gives more scope to the statement about listening and gives it added significance by setting listening on the background of larger epistemological issues.

Secondly, all the scenes of listening that I focus on involve forms of desire. Listening and passion are connected, either in the form of insatiable passion for music or of keenness to hear and respond to the voice of a lover. The form of the connection is different in all three cases, but an erotic motif underlies all these scenes. Finally, all three characters listen to a voice, and probe the boundaries of sound between noise, language and acoustic (even musical) wonder. But the vocal sounds they focus on all arise from a natural setting (a forest or wooded area) and are not set out in a purely human context; they are fully part of what Maurizio Bettini has called the phonosphere.[6] In a large, open space full of other acoustic stimuli, listeners fix their attention onto voices; the scene reflects on the status of a speaking voice and its reception among other sounds in a larger sonic environment. Finally, part of the richness of the texts I focus on resides in the fact that they all belong to very different cultures and have a very different status as prose or poetic text in their respective contexts. Issues of literacy and orality colour the interpretation of the scene differently in each case. Yet these scenes of listening do not claim to present historically situated listeners; they make claims, or they invite us to make claims, about trans-historical or trans-cultural features of the experience of listening.

Linguistic sounds as auditory event

Together, these scenes raise the following question: which parameters can we isolate as being involved in the experience of listening to language as auditory event? Versions of this question about the sonic dimension of language have been examined by literary critics, linguists, musicologists, philosophers of language, cognitive scientists and media theorists; all have proposed different ways of examining the problem. Without claiming to do justice to the range of approaches illustrated in the field, I propose to first isolate two models that give us particular purchase on the issue of listening.

The first is a formulation that I take from Paul Valéry's phrase that "poems

are a protracted hesitation between sound and sense".[7] The pair sound and sense recurs in many descriptions of the experience of language (especially poetic language), including in Giorgio Agamben's statement that poetry is a "tension and difference (and hence also the virtual interference) between sound and sense", or Allen Grossman's idea (as glossed by Susan Stewart) that "sound making is always in tension with sense making, yet is also the precondition for sense making", or Mutlu Blasing's claim that a poem "far from being a text where sound and sense, form and meaning, are indissolubly one, is a text where we witness the *distinct* operation of the two systems".[8] This dichotomy between and complementarity of sound – sense is foundational for innumerable poets, critics and theorists of language, and is the most deeply seated type of framework to understand the appeal of language, especially poetic (and even more specifically lyric) language. But the notion of tension between semantic and acoustic, or cognitive and sensual, is not quite enough to account for the actual experience. What *kind* of tension or hesitation, and how are we to imagine it – as a pulling apart, like a tug of war, where the risk looming on the horizon is that language come to a final breaking or halting point? Or is it a constitutive tension and hesitation, like elements in tension with each other generating some kind of electricity? Where does the tension originate and what is the listener's role in handling (or creating) it? These are some of the many questions that arise from that idea, when we try to use it to think about language as phenomenological experience – not as poetic product in an ideal state.

The second is a model that has been popularized by the film scholar Michel Chion. For Chion (who draws his ideas from the composer and theorist Pierre Schaeffer), listening falls into three categories: causal listening, semantic listening and reduced listening.

> Causal listening, the most common, consists of listening to a sound in order to gather information about its cause (or source). When the cause is visible, sound can provide supplementary information about it; for example, the sound produced by an enclosed container when you tap it indicates how full it is.[9]

The second type is semantic listening:

> I call semantic listening that which refers to a code or a language to interpret a message: spoken language, of course, as well as Morse and other such codes. This mode of listening, which functions in an extremely complex way, has been the object of linguistic research and has been the most widely studied. One critical finding is that it is purely differential. A phoneme is listened to not strictly for its acoustical properties but as part of an entire system of oppositions and differences.

The third one is reduced listening:

> Pierre Schaeffer gave the name reduced listening to the listening mode that focuses on the traits of the sound itself, independent of its cause and of its meaning. Reduced listening takes the sound – verbal, played on an instrument, noises, or whatever – as itself the object to be observed instead of as a vehicle for something else. A session of reduced listening is quite an instructive experience. Participants quickly realize that in speaking about sounds they shuttle constantly between a sound's actual content, its source, and its meaning. They find out that it is no mean task to speak about sounds in themselves, if the listener is forced to describe them independently of any cause, meaning, or effect. And language we employ as a matter of habit suddenly reveals all its ambiguity: "this is a squeaky sound," you say, but in what sense? Is "squeaking" an image only, or is it rather a word that refers to a *source* that squeaks, or to an unpleasant *effect*?

The insights provided by Chion's typology are easy to appreciate. Instead of highlighting a tension or hesitation described in the previous model, Chion points to the additional features of sound: the sounds of language can be analysed differently and heard as signs of human presence, as giving the listener extralinguistic information when actualized in a voice (information such as the gender or age or social class of the speaker, her distance to the listener, her emotional state for example). And the "reduced listening" can isolate acoustic features that make language "musical" (something that the dichotomy sound–sense does not really account for). But questions also arise, especially with regard to the relationship between those three types of listening. Do they occur simultaneously, and if so, what takes precedence? Do clashes occur and what happens in those cases? Or do we have to choose between modes of listening when we listen to language, and if so, how does one modulate from one listening to the next?

The synthetic ear

Rather than seeing how these models might apply to ancient auditory experiences, I would like to propose a different paradigm. Let's conceive of the phenomenon of listening to language as the adjustment of a series of faders: a listener's response to sound can be mapped onto a set of faders that move up and down (and I will come back to the question of agency later) according to different scales. Different listeners experience linguistic sounds according to different settings, and individual listeners can have different experiences of the same sounds depending on what the settings of these faders are. This paradoxically non-organic model allows me to conceptualize the experience of listening to language, and being aroused by it, beyond what is possible in one body, one mind and two ears, and extends a whole range of possibilities and combinations that might not be possible in the experience of one subject. My model is thus not primarily meant to capture the single experience of one listener in a specific context, but synthesizes a range of possible experiences.

The mechanism I propose is predicated upon the three scenes of listening I referred to earlier: I take the three ancient scenes and myths as departure points to think about the attunement of the ear to language along different scales, when listening to the sounds of language occurs on the background of listening to other sounds. The first fader modulates listening according to one's sensitivity to what I call the "resistance" of language (from lack of resistance to its residual presence). The second modulates listening according to one's sensitivity to the transparency of language (from maximum transparency of the sounds of the signifier to maximum opacity of the signifier). The third from immediacy to reverberation (from instant experience of language, to listening to repetition and delay). On my reading, listening to language, as experience, consists in adjusting these three faders. I will first examine the three scenes, elaborate on what they say about various forms of listening and, in a kind of coda, turn to questions this "synthetic ear" model raises.

Scene one: resistance and yielding

Plato's cicadas and the seduction of the senses

The first of the three scenes of listening involves Socrates in Plato's *Phaedrus*. The two characters, Socrates and Phaedrus, have wandered into the countryside and have been discussing speeches on love, and praising different types of speech, when Socrates suggests they abandon the conversation and return to the city. But as Socrates is about to leave, Phaedrus invites him to stay for more conversation, and Socrates responds (258–9):

S: I suppose we have the leisure, and I think too that the cicadas, as *they sing* in the stifling heat above our heads *and engage in dialogue* (ὡς ἐν τῷ πνίγει ὑπὲρ κεφαλῆς ἡμῶν οἱ τέττιγες ᾄδοντες καὶ ἀλλήλοις διαλεγόμενοι), are looking down on us. So if they saw even the two of us behaving like most people and *not engaging in dialogue* (μὴ διαλεγομένους) in the middle of the afternoon but dozing off and being *beguiled by them* (κηλουμένους ὑφ' αὑτῶν) because of our lazy-mindedness, they would be right to laugh at us, thinking that we are some slave coming to their retreat like sheep in the middle of the afternoon to nap near the spring. But if they see us *discussing (διαλεγομένους), and sailing past them uncharmed as we would pass the Sirens* (παραπλέοντας ὥσπερ Σειρῆνας ἀκηλήτους), they would be happy to bestow on us a privilege that they have from the gods to give to humans.

P: What is it that they have? I don't think I have heard of it.

S: It is certainly not appropriate that a lover of the Muses has not heard of such things! Well, once upon a time, the story goes, cicadas were men – this was at a time before the birth of the Muses. But when the Muses were born and song made its appearance, some of these men were *so struck by pleasure* (ἐξεπλάγησαν ὑφ' ἡδονῆς) then that, as they were singing, they stopped caring for food and drink, and in their forgetfulness they died. From these men, was born the race of cicadas, to whom the Muses give the privilege of not needing any nourishment, but of singing straight until their death without needing food or drink… . So for these reasons, one ought to speak and not to sleep in the middle of the afternoon.

P: So let's speak indeed.

For Socrates in this passage, there are two types of attention one can pay to the speaking voice: listeners can be beguiled (κηλουμένους) by the voice of the cicadas, or they can ignore their chatter, remain uncharmed (ἀκηλήτους) and focus on engaging with their interlocutor.[10] Socrates' description of the insects is striking: both cicadas and men are said to "engage in dialogue" (διαλεγόμενοι, διαλεγομένους). This use of the verb for the cicadas themselves betrays Socrates' view on the sounds of the speaking voice. It is not that *logos* is an attribute of the insect; rather, the sound of human speech is assimilated to tettigal chatter. It is not that the insects do philosophy; rather, humans participate in insectile noise when they converse.

One could say that Socrates here is relying on a model of listening that illustrates a dichotomy between sound and sense, one where listening for sense is exclusively privileged over listening to sound. What Socrates objects to, and what is thrown to the fore in the description of the singing cicadas, is that "voice appears as materiality opposed to the ideality of meaning".[11] What worries Socrates overall is the *psuchagogia* that speeches and the sounds of language in general exercise over the unsuspecting listener, lulling the mind by charming the senses.[12]

In warning Phaedrus against the allurement of sound, Socrates is drawing from a rich poetic tradition where beautiful sounds are considered to have bewitching power: as early as the *Odyssey*, alluring sounds were described as exercising a form of enthrallment on the listener, some *thelxis* (charm, enchantment) that bewitches listeners and acts on their soul.[13] Later philosophers, acoustic and music theorists as well as literary critics, (including the author of *On Style* and the group of scholars that came to be known as the Euphonists, as well as the Stoics) attributed especially euphonic and powerful effects to certain words, letters, or combinations or arrangements of letters.[14] Theophrastus for example, adapting a definition from Aristotle's *Rhetoric* 1405b17–18, explained that beauty in a word is that which gives pleasure to the

ear or the eye (κάλλος ὀνόματός ἐστι τὸ πρὸς τὴν ἀκοὴν ἢ πρὸς τὴν ὄψιν ἡδύ). The author of the *On Style* who cites the passage glosses it by explaining that "sounds pleasant to the ear are words like *Kallistratos* and *annoōn* since the double 'l' and the double 'n' have a certain resonance (σύγκρουσις ἠχῶδές τι ἔχει)" (*On Style* 174).[15] Other Hellenistic scholars commented on the importance of individual sounds and their melodious arrangement (the Euphonists Megaclides, Andromenides, Heracleodorus and Pausimachus, for example, as they are reported in Philodemus' treatise *On Poems*1).[16] This belief in the power of individual sounds was influenced by atomistic philosophy and the idea that στοιχεῖα (*stoicheia*, "building blocks") combined for structure and aesthetic effect.[17] Dionysius of Halicarnassus among others discusses the "prime elements" (*stoicheia*) of human articulated speech, and isolates the "most powerful" of these, "and those which produce the most attractive sound" – the long vowels, because "they are sounded for a long time, and do not arrest the strong flow of the breath".[18]

Examples could be multiplied, but the difficulty with this type of account resides in that they essentialize sound: sounds or certain arrangements of sounds are given properties *per se* (even if these properties are not always realized orally) but the reality of different audience-responses, in experience, is not accounted for.[19] The aesthetic experience of words is located in linguistic sounds' properties rather than in the response of the listener. Moreover, this type of explanation does not account for the fact that different features, meaning and materiality, sense and sound, are inseparable in actual experience: voices are not pure materiality or pure aesthetic experience, and there is no ideal meaning without sound. Language cannot be an interminable string of irresistible but meaningless babble. The difficulty of accounting for the experience of the sounds of language resides precisely in this duality and the interference between sound and sense. The Sirens paradigm that Socrates refers to in his exchange with Phaedrus is a particularly representative example of that paradox: in the Sirens' song, it is both the promise of knowledge *and* the pleasure of their voice that charm Odysseus. The haunting power of the Odyssean passage is that we ultimately do not know which of the features has most appeal on the hero or how they combine or rival in the moment of perception. Odysseus remains sublimely silent about whether the Sirens actually delivered too much information, or sang that high F6 a tad on the flat side.[20]

So, following Socrates' advice, let us ignore the Sirens and look for another way to account for the phenomenon of listening, one that does not focus on a split between sound and sense or that only takes one component (sound) into consideration at the expense of the other. A remark of David Lodge's will be helpful here: "in verse, sound and sense are inextricable. *Read silently, or*

aloud, poems perform" (emphasis added).[21] Poems, and more generally, language performs, but poems and language do not perform without an audience: they perform *for* us, and they perform *us*, through our body. In listening, we are both actor and audience of the performed sounds. Besides reinforcing the idea that any model for listening has to take into account the inextricable nexus of sound and sense, the remark highlights the dependency of linguistic sounds on a speaker-listener, and on the embodied experience of a speaker-listener. There is no reading, no listening that does not happen in and through a body, no appreciation of sound that is not both sensual and cognitive.[22] What differs in individual experiences of listening to linguistic sounds is the way we are willing or able to be performed by sounds. The power of linguistic sounds resides in our willingness, and ability, to be performed by them.

The pistachio versus olive model

Taking inspiration from the strange and reverse equivalence between food and song established by the myth of the cicadas in the *Phaedrus* passage above, between what comes in the mouth and what comes out of it, and the appeal to the senses that they both rely on, I would like to suggest a different image to think about the relationship between the acoustic and the semantic in the experience of listening to the sounds of language and what I would call their "resistance".[23] One can understand the two extremes of the attention to the resistance of language by comparing the experience of eating pistachios with that of eating olives.

To eat the flesh of a pistachio, you shell the nut with your fingers, you place the pistachio in your mouth and you eat it. The pistachio gives itself naked to the tongue; there is no resistance, no residue, no mess, no fuss, just a pile of discarded nutty carcasses after the consummation of the flesh. With an olive, things are different: one gets access to the fruit first, the juice explodes in the mouth, the flesh delivers its flavour, but the pit remains, and one can worry it in one's mouth quite a bit before spitting it out, or disposing of it quietly if company requires it.

I would see the same dichotomy in the experience of listening to language: for a listener like Socrates, listening is like eating pistachios. What is important is access to the fruit: the shell of sound is not an essential part of the experience. One can discard it from the start and attend to the flesh of *logos*. It is not that the shell does not exist, but it is not the heart of the sensual experience.[24] Less metaphorically, what matters is *logos*, or in the words of the *Phaedo* "thought (λογίζεται) is best when the mind is gathered into herself and no things of the senses trouble her – neither sound nor sights (μήτε ἀκοὴ μήτε

ὄψις) nor pain nor pleasure – when she takes leave of the body and has as little as possible to do with it".[25]

But for other listeners, part of the pleasure of eating olives is to suck on the pit for a long time. One does not eat olives for their pit, but that hard centre is part of the experience, not an impediment to pleasure. It seems to me that when hearing Homeric lines such as λιλαιομένη πόσιν εἶναι (*Odyssey* 1.15, of Calypso desiring Odysseus to be her husband), or Lucretius' *vivida vis animi pervicit* (*On the Nature of Things*, about the lively power of Epicurus' mind prevailing), the experience resembles the experience of eating an olive. They convey important descriptions (of Calypso's desire or Epicurus' influence), they deliver the flesh of the fruit, but one can also experience the sounds that stay in the ear like an olive pit stays in the mouth, and something one wants to play with, just for the sake of a sensual experience of sorts. There is nothing in the linguistic sound itself (either the "vi" alliteration in the Lucretian line, or the repeated diphthongs in λιλαιομένη … εἶναι in the Odyssean one) that dictates the way sound should stimulate a particular sensual experience; but the line creates an event that shows what I call the resistance of language. In these cases, to use another line of Valéry, sounds are "not just noticed and respected but desired and thus repeated": they play us, and one wants to hear again a seductive line or stanza that "creates the need to be heard again".[26] There is resistance, aural material that belongs to the experience without interfering with it or being the ultimate goal.

Ultimately, it is not a question of the words or the sounds themselves, of whether some words are like pistachios and others like olives, as some ancient critics would have it. In both models, the relationship between sound and sense does not reside in the structure of the fruit itself (both have an edible and an inedible part), but in how one is willing to handle the "thingness" of language, and to enjoy it. It should be clear from what I have suggested so far that neither thinking about "the tension between sound and sense" nor thinking about an opposition between semantic listening and reduced listening is sufficient. Something else is at stake, and that is the desire of the ear itself to be arrested, called upon, and experience linguistic presence and the irreducible materiality of language. In all these cases, sound is never more than an invitation: it is a promise, not a delivered thing, and one can remain perfectly impervious to the allure of the lines quoted above.[27] But this does not exhaust the way language as event works, and I now turn to a second scene of listening.

Scene two: transparency and opacity

Bird watching and modes of listening

The second scene comes from Longus' romance *Daphnis and Chloe*. The two adolescent lovers Daphnis and Chloe are enjoying the first summer of their love, in a countryside setting:

> One day, a ringdove delighted them with its *bucolic vocalizations* coming from the wood. As Chloe sought to know *what it was saying*, Daphnis taught her by telling her a well-known myth. "There was once, young lady, a young lady, who was as beautiful as you, and who too used to pasture her many cows in the wood. It turns out that she was also a songster and the cows used to delight in her music, and she pastured them neither with the blows of a staff nor with the prick of a goad, but sitting under a pine-tree and crowned with a pine-tree wreath, she sang of Pan and Pitys, and the cows would stay near her voice. There was a boy who pastured his cows not far away, and he too was beautiful and a songster like the girl, and he competed with her in singing. He rivalled her song with a voice that was louder, because he was male, but sweet, because he was a child, and he beguiled eight of the best cows to his own herd. The girl was distraught by the loss of her herd, and by her defeat in song and she prayed to the gods to be turned into a bird before returning home. The gods granted her wish and turned her into this bird here, who lives in the hills as she used to, and who is musical as she had been. And she still now tells her misfortune in her song: she is looking for her stray cows." Such were the delights that that summer brought them.

The myth has received much critical attention in recent years, but most of it has concentrated either on the relationship between the embedded myth and the rest of the narrative, on the symbolic significance of music, or on the interplay between myth and society.[28] Virtually no attention has been paid to the kind of listening enacted in the story. Yet the myth gives itself as a response to a specific kind of listening illustrated by Daphnis and Chloe. In the typology of Chion, both characters practice causal listening: we are not told whether they look for the bird as they listen to it, but they identify the song of a specific bird, a *phatta* (a ringdove). This is exactly the process Chion describes: "in … causal listening we do not recognize an individual, or a unique and particular item, but rather a category of human, mechanical, or animal cause: an adult man's voice, a motorbike engine, the song of a meadowlark"[29] – or here, a ringdove. But Chloe wants more: for her, the "bucolic vocalizations" express something, an emotion, maybe a signal – they "mean". She thus joins semantic listening to causal listening, focusing on what it is saying besides identifying the cause or getting lost in the beauty of the sound. Daphnis' myth (probably an invention of its author) is an attempt to explicate what and how these sounds mean.

This is helpful, but there is more to the scene, and in the next few pages, I would like to pursue the insights of a very clever critic.[30] Greek and Roman texts provide many examples of poets transcribing animal sounds into non-

semantic series of syllables (*brekekekex koax koax* in Aristophanes' *Frogs*), and exploring the boundaries between animal and linguistic sounds (for example when a bird sound transcribed as an onomatopoeia *tio tio tio tio tio* turns into an imperative *ito ito*, or *epopopoi popoi popoi* turns into the interrogative *poi* in Aristophanes' *Birds*; see Nooter in this volume on these animal sounds). We also encounter many examples of bird names deriving from the type of sound made by the bird in question.[31] But one also finds a tradition of identifying bird cries as human words.[32] And indeed for H. H. O. Chalk, what Daphnis' myth glosses is a sound he heard as *pou moi bous oktō* (where are my eight cows?) a series of phonemes that approximates the bird sounds themselves.[33] Rather than hearing an onomatopoeia, a meaningless word that transcribes the sound of the thing itself, Daphnis *semanticizes* the animal sound, hearing grammar in the woods. This episode invites us to reflect on the connection between the raw sounds made by the signified (here the bird) and the sounds of the signifier (the sounds of the sentence). The specific point has to remain tentative of course, because Daphnis does not explicitly say that the bird goes *pou-moi-bous-oktō* but it leads us to reflect on a much larger question. So I turn to my second fader.

Between onomatopoeia and pun: the aural mimetic pole

Just as I suggested two extremes on a scale for the first relationship within language (from least resistance to most resistance), here too, one can conceptualize listening to language as modulating between two extremes. One can tune one's ear to listen to maximum correspondence between sound of word and sound of the thing referred to (signifier and signified); or one can tune one's ear to perceive the maximum semantic possibilities (an explosion of possibilities in the sound of the signifier itself). This way of "tuning in" to language, or adjusting one's listening, has to do with the transparency of language and how much we can be attentive to the sensual potential of linguistic sounds: whether we perceive language sounds as transparently as possible, as modelling, or evoking or imitating, or suggesting the sound of the thing itself; or whether we want to perceive language sounds as opaque, and standing in the way, of our sensual experience of the thing but evoking other sounds and creating a proliferation of other sounds.

A few examples will illustrate the case in point. In a line of Homer like αἰχμὴ χαλκείη χαμάδις βόμβησε πεσοῦσα (the head of bronze fell ringing to the ground, *Iliad* 16.118), are we not just as sensitive to the experience of the fact that the sounds are first harsh (αἰ*χ*μὴ *χ*αλκείη *χ*αμάδις) and then boomingly resound and echo (βόμβησε πεσοῦσα) as we are to the description itself? The line makes us perceive more directly, sensually and not cognitively,

the thing itself, the harsh sound of bronze spearheads. The same could be said about the "ng" sound of a released bow string (described as κλαγγή in the case of Apollo's bow [*Iliad* 1.49] and λίγξε in the case of Pandaros' [*Iliad* 4.125]), or the gurgle of a thick liquid poured in a pail in γλάγος ἄγγεα δεύει (*Iliad* 2.471=16.643): in those cases too, the sounds of the line echo in stereo the aural description proposed in the verse. Many words in Greek or in Latin exhibit this onomatopoeic phenomenon: *barbaros* evokes the "bar-bar" sound made by barbarian speech, and *bombax* (in Aristophanes) or *babax* (in Archilochus) reproduces the blabber of chatters; *mugire* echoes the moos of cows, *murmur* the hushed sounds of natural elements, and *vagire* transcribes the sobbing *wa-wa* of infants. One could think about the evocativeness of Pratinas in his hyporchema using Διονυσιάδα *πολυπάταγα* θυμέλαν (a sonorous word meaning "full of tumult") to describe the worship of a sonorous god and numerous other examples where the sound of the word mimics the sound of the thing, and bypasses the intellectual experience to give sensual or spiritual access to it.

Many ancient critics have noted this phenomenon, starting with Plato's *Cratylus* that expresses the wish that words mimic the reality of the thing, as well as the Euphonists and the Stoics.[34] The Euphonists in particular held that a description is convincing or has *enargeia* (and they were especially dealing with sound phenomena as they found them illustrated in Homer) when the sound of the word reflects or imitates the sound that the thing makes, or evokes the softness or harshness associated with some ideas.[35] In modern criticism as well, poets and scholars have reflected on how "the sound must seem an echo to the sense" (to use Pope's expression, on which see Butler in this volume). In the 1970s, W. B. Stanford devoted several articles to sound effects in Homer, and "sound and sense" in Greek poetry, providing typologies of euphonic principles, including various forms of mimesis.[36]

But the typological enterprise is bound to disappoint, since the "echo of the sense" is never more than an invitation. It is difficult to improve on Sean Gurd's evocative image to describe the phenomenon:

> [W]e should not speak of the relationship between sound and meaning as mimetic. Nor should we say that the auditory presence of art is a self-presence of the type crucial for Western metaphysis. Rather, in both describing and working with sound, a song … reduces the space between signifier and signified to an interval optimal for allowing the mutual *interferences of sound and meaning to produce dissonant overtones all their own* (emphasis added).[37]

This notion of reducing the space between signifier and signified is crucial here, as is the idea of varied and variable overtones and other tones proper to each space: just like an overtone is "a musical tone that is a part of the

harmonic series above a fundamental note and may be heard with it",[38] the echo of the sense may be heard in the sound, as something enriching, and complicating, the experience of hearing the fundamental note (which I take here to be the meaning of the word).

In those cases of mimetic assonance, alliterative mimicry and onomatopoeia, language pulls towards as much transparency as possible. Sounds mimic either the sounds made by the thing itself (the cries of animals or the murmur of nature or the clanging or banging or crashing of objects) or suggest our perception of them (a perception of softness or crashing, etc.). The linguistic sound tends towards its erasure, stimulates the senses and provides the aural experience of the thing itself, collapsing the linguistic. This is one end of the scale, featuring moments when the distance between the sounds of the signifier and the signified is collapsed.

Between onomatopoeia and pun: the pun pole

At the other end, there are moments when several signified explode the sound of the signifier. In this sort of situation, there is no suggestion of a direct sensual correspondence between word and thing, but rather, a proliferation of mental associations suggested by one set of arbitrary sounds. The vocal material can be exploited for its potential to arouse various ideas. Here, rather than tending towards transparency, the signifier tends towards maximum opacity.

Take the sound of the word *malo*. The sound of *malum* might not evoke anything in itself (unlike *glagos*, *mugire* or αἰχμὴ χαλκείη χαμάδις for example). *Malo* does not "sound" like an apple the way "crunch" might evoke the sound of biting into the fruit. Moreover, *malo* can refer at once to a verb (I prefer), to a person (a naughty boy or an evil man, the noun *malus* in the dative or ablative masculine singular), to a thing (an apple tree or an apple, the noun *malum* in the dative or ablative neuter singular), or to something more abstract (adversity, or disaster, the adjective *malum* in the dative or ablative neuter singular).[39] The sound of the word here is saturated with different meanings, overlaid with signified, exploding with potentials. Repeating the sound displays different facets of things and actual and virtual realities.

This capaciousness of the sounds of signifiers to contain different signified meanings is exploited by poets and verbal artists for different purposes: for puns and fun, often to give a sense of the absurd, for double entendre and sexual allusion.[40] Most often, the sounds of words are meant to suggest the sounds of other words. In Jonathan Culler's words: "[P]uns … exploit … the fact that language has ideas of its own".[41] Even more evocatively perhaps, Breton: "[W]ords make love to each other".[42] There is a proliferative logic

dictated by sounds themselves, in their arbitrariness, and sounds suggest other sounds, yearning for the listener to hear "the call of the phoneme".[43] Sounds in *paterer* "I allowed" in *Aeneid* 10.847, for example, suggest *pater* "father": as Mezentius bemoans the loss of his son Lausus, it is his own wretched survival and his tragically ironic identity as father that surfaces in the line. Frederick Ahl in his *Metaformations* underlines many such instances in ancient poetry: in *Aeneid* 6.30–3, the sounds of the name for father (*pater*), once again, permeate the line when the poet describes the part (*partem*) of the work of art (*art*) where Daedalus tries to depict, in vain, the fall of his son Icarus.[44] Similarly, in *Aeneid* 3.348, *singula* "each word" might suggest *singultus* "sobs", in a form of "psycholinguistic game".[45] Similar phenomena of words lurking behind other close-sounding words have been examined in Lucretius and explained by the poet's atomistic approach to language:[46] fire (*ignis*) and firewood (*ligna*) are "composed of slightly different combinations of letters"; *amare* (to love) lurks at the surface of *amarus* (bitter) in the *De rerum natura*, and *clarus* sounds out when one hears Heraclitus (*DRN* 1.635–44). In Greek comedy, the word for coals often recur in Aristophanes, because "coals" (***anthr**akes*) lurk behind "men" (***anthr**opoi*) and make for unexpected ends of sentences. Many other examples of paronomasia (too many, as commentators as early as Plutarch noted), can be found over the Aristophanic corpus, moments where we witness "the playful drive of language to a certain subjective boundary, a crossroads of sorts, where one enters either that negative realm of delirium or that related, positive space of comic climax".[47] Perhaps most spectacularly, in Homer, one can choose to have a glimpse of Achilles' two fathers in the lines about the spear of Achilles,

> τὸ μὲν οὐ δύνατ' ἄλλος Ἀχαιῶν
> **πάλλ**ειν, ἀλλά μιν οἶος ἐπίστατο **πῆλ**αι Ἀχιλλεὺς
> **Πηλι**άδα μελίην
>
> which no other Achaean could sway, but he alone knew how to sway it,
> Achilles, the **Pelian** ash-tree [spear] (Homer, *Iliad* 16.141–2).

While Patroclus describes Mount Pelion as Achilles' metaphorical genitor a few lines earlier, it is the name of Achilles' mortal father, Peleus, that simultaneously resounds (as "dissonant overtone", to use Gurd's image) when the adjective Pelian or the verb "to sway" (πάλλειν and especially πῆλαι) are pronounced.

With these processes that capitalize both on the arbitrariness of the relationship between signifier and signified and its potential, we might be very far from the idea that sounds produce, in and by themselves, specific aesthetic effects. But again, the process illustrates the way sound and sense are inextricable – sounds calling in other sounds, or sounds evoking sensations

and ideas – and the way one can tune in differently to the experience. An essential feature of this type of attention to sound is that tuning to the word that way is never more than an invitation. One could multiply the examples but the point is that there is the possibility in listening to the sounds of language of going from extreme attentiveness to the ability of sounds to efface themselves to suggest other things (maximum transparency), to the sounds themselves and their ability to suggest multiple things (maximum opacity of the sounds themselves). The ear can modulate and do either: it is more a question of arousal in the listener, and the cognitive connections created, than just something in language itself. At one end is a sensual connection to the world through sounds; at the other, a mental experience of possible worlds suggested by sounds. In between lies a variety of shades of cognitive and sensual stimulation, as varied as there are listeners and settings.

Scene three: immediacy and delay

Echo and the creative power of the ear

The last scene of listening involves a mythical character: the nymph Echo, as presented by Ovid in *Metamorphoses* 3. As is well known, the first part of the Ovidian narrative involving Echo and Narcissus has detailed the nymph's tragic loss of vocal agency. Because the nymph had distracted Juno with her tales, preventing her from noticing Jupiter's nymphic indiscretions, the goddess punished Echo by reducing to a minimum the power of the tongue that had deceived her (*linguae … potestas … | parva*, *Metamorphoses* 3, 366–7). From now on, Echo will only be able to repeat the last words uttered by her interlocutor (*reddere de multis ut verba novissima posset*, 362), duplicate the syllables at the end of a sentence, and carry back the words heard (*in fine loquendi | ingeminat voces auditaque verba reportat*, 368–9).

Most people who have read the scene have emphasized the role of Echo's voice (including what it tells us about the empowerment of the female or the subaltern). Shane Butler's superb chapter on the nymph in his *Ancient Phonograph* has highlighted many of the virtuosic games played by Ovid as he reflects on the capture of voices by the text.[48] But what I want to emphasize is that, more than a voice, it is a unique type of listening that characterizes Echo.

The nymph's courtship of Narcissus is described in the following lines (3.379–92):

> One day the boy happened to be separated from his trusted companions; he cries out: "is anybody here?" "Here!" Echo replies. He stops astounded, looks all around, and cries loudly "come here!": and she calls back to the one who called. He looks behind him, and seeing

> that nobody comes says "why do you flee me?" and he gets back as many words as he had uttered. He tries again, and deceived by the reflection of another voice, he calls out "here, let's come together" and with a sound that had never been more willing, Echo responds "let's come, together!" Getting out of the woods, she hastens in accordance with her words, and throws her arms around the desired neck. But he flees away from her and in his flight says "Take your hands off me! Let me die before you have power over me!" to which she answers nothing but "have power over me!"

The scene describes two listeners in action: on the one hand, we have Narcissus, practising the type of causal listening Chion has described. In his first encounter with the voice of Echo, he performs the most natural sort of listening, and looks around, trying to associate a sight with a soud. But when he cannot determine the source of the acousmatic voice (a voice with no visual presence associated with it), he turns to a form of semantic listening and concentrates on the message:[49] how come there is a sound that claims presence ("I am here") but does not corroborate this presence? The confusion is both semantic and cognitive, and Narcissus illustrates the puzzlement caused by the uncanny nature of the acousmatic voice.

Echo, for her part, is a different listener. Whereas Narcissus' listening is described in the text, Echo's listening is enacted through it. Ovid invents a figure who creates everything thanks to the power of her ear. Echo cannot initiate sound but by pausing and subverting the sequence in which we hear, by introducing delay and cut, Echo embodies and foregrounds the power of listening creatively, at a remote and after a delay.[50] Her power does not reside in the making of sound but in her experiencing sound through time, as she, rather than the sound, changes. The type of listening Echo illustrates is embedded at the heart of the text:

> Sed, quod sinit, illa parata est
> **exspectare sonos**, ad quos sua verba remittat.

> But, because nature allows it, Echo is **ready to expect**
> sounds, to which she responds with her own words.

(Ovid, *Metamorphoses* 3.377–8)

In a mythological scene devoted to an exploration of the senses and sensory delusion, *exspectare sonos* (to expect sounds) blurs the parallel between the visual and the aural in the description of the attentive listener. The root of *exspectare* refers to the sphere of vision (*spectare*, to look on); but *exspectare* introduces the notion of temporality that the visual experience lacks. Echo expects, awaits, looks forward to what Narcissus says – exemplifying what is at the essence of listening, not just *spectare sonos* (to behold, observe, register) but *exspectare* (wait for them, even desire). Echo's desire for Narcissus is crystallized in the *exspectare* that reveals what I would call her erogenous ear.

The text enacts the mechanics later in the narrative:

> nullique libentius unquam
> responsura **sono** 'coeamus' retullit Echo
> et **verbis favet suis** egressaque silva
> ibat.
>
> With a **sound** that had never been more willing, Echo responds
> "let's come, together!" Getting out of the woods, she hastens
> **in accordance with her words**.
>
> (Ovid, *Metamorphoses* 3.386–9)

Taking the sound (*sonus*) of *coeamus*, Echo in her creative listening transforms it into a word (*verbum*) of her own: her desire for the boy is channelled in her excited expectation of his words, and enacted in her creative listening. The nymph suggests that in erotic as in acoustic matters, part of the pleasure is in the anticipation and repetition of, ultimately, the same experience.

Time, delay, rhythm

This is the delay/immediacy scale I was referring to. From this original scene of listening, one can expound on the process of listening to the sounds of language. I see Echo revealing not so much the tension between sound and sense as much as revealing the potential inherent in listening to the sounds of language *through time*. Our perception of the same sound (or a repeated sound or sequence of sounds) changes in each new environment, because the listener's own attunedness to sound changes through time, and can be shaped by the acoustic event itself. It is not so much a question of syntax, as of the conditioning of the listener, through time. It can never be the same ear that hears the sound repeated a second time: it is a changed ear.[51]

More can be said about the games of delay and expectation created by the echo. Most of the games illustrated in the scene have to do with verbs and involve subjectivity. Listening to Narcissus' words, Echo dislocates sentences and reads in them a whole new set of meanings because the relationship of the listener to the sound changes as the sound is repeated. Take the first sentence: *ecquid adest* ("Is somebody there"). When *adest* is repeated, the verb this time contains ambiguity: is it "she is here" – or "he is here" that the nymph is saying? Similarly, when the *quid me fugis* is repeated in the mouth of Echo, when the same sounds recur (although they are only described, not actually repeated), they cannot be the same: it is the me and the you that have changed in the listener's relationship to sound. The same sound, and the same grammar, involved a transformed relationship between the two actors. Echo thus destabilizes Narcissus' world as he constructs it, reading his sentences past

syntax, ridding them of syntax. She asserts the constant flow and instability of meaning, the inherent contradictions of the signifier. The sounds remain intact, faithful to the echoing principle, but the texture of the reality described changes. At the end of the exchange for example, the reality of time ("before you have power over me" – *ante quam sit tibi copia nostri*, 391–2) becomes wish when a subjunctive loses its anchoring in a temporal clause to become a subjunctive of wish ("have power over me" – *sit tibi copia nostri*). What Echo does in these lines is bring attention to the relationship between the sound and the listener's subjectivity in the moment of listening.[52]

This is of course a very remarkable case, the maximum intensity on the scale from immediacy to delay. Most experiences of language are at the other end of the scale, they are immediate, and follow the one-direction logic of time. Just like Narcissus, we usually do not step into the same river of language twice. But one can still tune in to more modest manifestations of delay and repetition. Take the exchange between Paphlagon and the sausage-seller in Aristophanes' *Knights*:

> ΠΑ. Καταβοήσομαι βοῶν σε.
> ΑΛ. Κατακεκράξομαί σε κράζων.
>
> Paphlagon: I'll outbellow you with my bellowing.
> Sausage-Seller: I'll shout you down with my shouting.
>
> (Aristophanes, *Knights* 286–287)

The power of the lines resides as much in the "resistance" of language I have referred to above, as in the repetition of the aural material, the re-experiencing of the verbal thingness. For it is clear that there is a difference between those two lines, and that a listener experiences the second verse differently from the first, by virtue of hearing something as an echo of an earlier iteration. I would not locate the effect of the lines as specifically having to do with the "k" sound that would mimic shouting or even evoke ideas of harshness, or with the sequence in itself, but with the re-experiencing (and slight variation) of the sequence. In particular, one can imagine increased vocal volume, both because of the addition of a syllable in the verbal form, and because of the inversion of participle and pronoun, that allows the line to finish on an open syllable. The difficulty resides less in "hearing" those lines or experiencing the phenomenon or even pinpointing the mechanism than in explaining where the power of such lines lies: and again, part of it resides in the fact that the ear of the listener has been changed by the experience of the first line.

One could say the same of this melodious line of the *Iliad* (18.576), judged by Samuel Bassett to be the most beautiful Homeric verse:[53]

> πὰρ ποταμὸν κελάδοντα, παρὰ ῥοδανὸν δονακῆα

> along the resounding stream, along the swaying thicket of reeds.

It is maybe in such cases that we can best understand what Nancy says about sound, and what is at the heart of this chapter: "sound arrives as an event".[54] It is true, as Bassett observes, that there are no harsh-sounding consonants, and that of the twenty consonants, ten are liquids. Yet, as he continues, in a parenthesis, "[T]his is to anatomize beauty! The verse is otherwise pure poetry". What Bassett calls "pure poetry", and what he glosses a few lines later as "the overflowing of the poet's feeling", or "the lyric quality [of the picture], but without sentimentality", I call "aural event": in the altered repetition of the sounds, there is the sense of something important having just happened. The vowel sequence a-o-a-o/e-a-o-a becomes amplified and takes a new quality when repeated as a-a-o-a-o/o-a-ē-a. The near repetition creates a sense of depth in time, and the listening gets altered along with the listener. Whereas the two expressions are roughly parallel aurally, their syntax differ (preposition + noun + adjective/preposition + adjective + noun) and the rhythm does not split the two expressions equally: the penthemimeral caesura after the first phrase provides a feeling of musical "pick-up" to the second phrase, of "going to" the second expression. In this regard, what Culler says about lyric could be extended to Homer, and forms of prose:

> [R]hythm gives lyric a somatic quality that novels and other extended forms lack – the experience of rhythm linking it to the body and, perhaps, to the rhythms of various natural processes – and thus contributes both to a different sort of pleasure from those promoted by novels and to a sense of a special otherness: lyrics are language, but language shaped in other ways, as if from elsewhere.[55]

Culler is cautious about linking poetic rhythms to natural processes, but there is in some sounds something as self-evident as a natural event. Once again, we come back to the idea of listening as a somatic process, a somatic process shaping the cognitive. Culler continues:

> [A] reader of verse, attentive to the rhythms and verbal patterning, produces or articulates the text as he or she hears it, occupying, however temporarily, the position of speaker.

The "attention to the rhythms and verbal patterning" describes the listener, a form of listener like Echo who hears the texts differently as she segments it differently (*sit tibi copia nostri*, rather than *ante quam sit tibi copia nostri*). The repetition of sounds gives the ear an agency of its own in the creative process of sense-making.

Coda

This chapter has focused on the sounds of language as aural event. Starting from three ancient scenes featuring listeners in action, I have suggested imagining the ear as a mechanism able to adjust to three features of the sounds of language: what I have called its resistance, its opacity and its immediacy. This model seems to me better able to capture the complex dynamics involved in listening to linguistic sounds than one focusing on an in-built "tension between sound and sense" in any language, or a model isolating "three modes of listening". Because my model is also built on observations of ancient scenes of listening, it offers a valuable alternative to investigations that concentrate on ancient theories of language. My point has been that the power of sounds is not a function of language itself, and the power of poetry or special language does not reside in the sounds of language *per se*, in the *stoicheia* of the language, but in the attunement of the ear, in its ability to be stimulated by various features, in its willingness and desire to be played with. In this respect, the idea of the ear as a mixing table with a series of faders allows us to study more than one phenomenon at the same time: it might be *both* because of the resistance of language and its opacity that the ear is arrested, *both* because of the delay and repetition and the transparency of language that it experiences aesthetic pleasure.

Some questions are bound to arise, of course. In the synthetic model I have suggested, I only took into consideration three faders. But are these the only ones? What about other features of linguistic sounds, such as purely melodic aspects (including the pitch accents and their contribution to the "mood" of the poem), rhythm or silence?[56] How does one figure the relationship between sound and silence, pauses and unsaid, in the experience of language? What is their role in the aesthetic experience? These ideas would deserve a much longer study, but the difficulty is that I have not found an ancient scene staging a listener in action.

A second question has to do with the relative importance of these faders, and their relationship with each other. Can they all be pushed to maximum intensity? In actual experience, there are limits put on one's cognitive abilities to process language, and on the trade-offs the mind has to perform.[57] But the pleasure one takes in linguistic sounds results from the particular relationship between these different elements. I have repeated several times that these faders can have different settings for different listeners, and can capture different experiences of the sensual and cognitive aspects of language for the same listener. In this respect, there is no ideal listener, no ideal setting: it is the experience of the linguistic event, in its uniqueness, that determines the setting of the faders. Some faders work in conjunction, but pushing them all to their maximum comes at an expense: for example, it is difficult to both experience the full proliferation of possible worlds through puns and process the haunting

rhythm of some lines. The experience of the whole dissolves at the expense of some detail.

The most difficult is that of aural agency: who or what sets the faders? What prompts us to listen to the sounds of language in a certain way? Several modern authors quoted in the course of the chapter have suggested an answer: some genres would prompt us to listen more carefully to the sounds of language than others. Garrett Stewart in *Literature and the Phonotext*, Susan Stewart in *Poetry and the Fate of the Senses*, Jonathan Culler in *Theory of the Lyric* all attribute to lyric the greatest potentiality for deployment of linguistic sounds, and a tacit agreement with the reader-listener that sound is all important. For Northrop Frye (quoted by Culler) in particular,

> poets undertaking long poems develop the skill of thinking in the meter they have adopted, which frees them to tell stories and develop ideas, whereas in lyric greater importance falls on … sound patterning of rhyme, alliteration, and assonance and the possible semantic relationships such patterning brings.[58]

But as my comments have suggested, many such moments of sound proliferation occur in Homer as well, or in Ovid or Lucretius, and there is no need to characterize them, as Bassett does in the case of Homer, as borne by a "lyric impulse". If one attends to sound as "aural event", there is no need to suppose the same modern distinction between genres that modern critics want to impose, especially as the distinction they rely on are based on performance features ("epic is read, lyric is heard") that do not apply to ancient epic and lyric (both performed).

Let me conclude on this question by returning to the ancient listeners in action. If we think about what prompts listening to linguistic sounds a certain way and determines the possible "settings" I have described, we cannot ignore that representations of sonorous objects or noisy events might prompt a particular experience: the description of a resounding river, a chirping bird, a clanging armour or a chatty wood nymph, might indeed call us to pay attention to the sounds of the description even more carefully. But it is all a question of degree: in so far as most things in the world have a potential to make sound, even if they are not intrinsically soundful (for example a chair, a flower or a sandal), listening to the sound of the line is to be attuned to the aural manifestation of the world, in all its intensities. Listening to language is just a beginning to listening to the world, rather than the other way around. This is ultimately the most marvellous lesson of the three myths I have examined, and the answer that they provide, in the fantastic non-logical logic of myth. It is no coincidence that all those scenes of listeners being attuned to the sounds of language occur in a natural setting: in the noonday heat, under a tree near the Ilissus river for Socrates and Phaedrus, in a forest for Daphnis

and Chloe, and in the woods for Echo. And it is no coincidence that the three myths recount a transformation of a human being into a musical animal or acoustic feature of nature. What the fantastic metamorphic myths gloss is a mirror version of the transformation happening in a listener being aroused by sound, a transformation that could not be better described than by Wallace Stevens's words about poetry: "the inhuman making choice of a human self".[59] In listening to the sounds of cicadas, birds and echoes (all aural manifestations where humans made choice of a non-human self according to the myths), our ancient listeners provide us with an aetiology and an answer as to the agency of the ear, and its urge, like the storyteller, to linger at the cusp of the human and non-human elements of sound.

1 The expression is drawn from a passage of de Certeau: "l'oreille est la peau délicate que le son caresse ou irrite: une zone érogène, exacerbée dirait-on, par les interdits qui chassent de la langue et des bonnes moeurs, les grossièretés, les vulgarités et finalement les passions" (de Certeau, Julia and Revel 1975: 111).

2 Here and throughout I use "sound" as a shorthand for the aural manifestation of language. See Saussure (1972: 164): "il est impossible que le son, élément matériel, appartienne lui-même à la langue. Il n'est pour elle qu'une chose secondaire, une matière qu'elle met en oeuvre… . Dans son essence (le signifiant linguistique) n'est aucunement phonique, il est incorporel, constitué, non par sa substance matérielle, mais uniquement par les différences qui séparent son image acoustique de toutes les autres".

3 Jakobson, Waugh and Taylor (2002: 3). For the ancient roots of this practice (described by Jakobson in the first chapters [2002: 9–25]), see below.

4 This is developed in LeVen (forthcoming b).

5 Peponi (2012: 58–69).

6 Bettini (2008).

7 "Le poème – cette hésitation prolongée entre le son et le sens" ("Rhumbs", Valéry 1957: 636).

8 Agamben (1999: 109); Stewart (2002: 64); Blasing (2007: 14). See also Stewart (1998: 31), with comments on "avant-garde materialism in twentieth-century poetics (the symbolist ideal of fusing meaning and sound as expressed in Verlaine's 'Art Poétique', Marinetti's 'bruitisme', Dada sound poems) with its pursuit of pure sound". On other sound experiments in modernist poetry, Bernstein (1998).

9 Chion (2012, 48 for first quotation, and 50 for the next two). See also Chion (2010: 108–28, 179–224).

10 On these terms for poetic beguilement, Peponi (2012: 31–2, 70–80).

11 Dolar (2006: 14–18, 15 for quotation).

12 On rhetoric, or the force of *logos* being *psuchagogia*, see *Phaedrus* 261a8 and 271c10.

13 For example of *thelxis/thelgein*, see *Odyssey* 1.55–7, 3.263–4, 12.39–45 (song of the Sirens), 17.518–21, 18.281–3; *Homeric Hymn to Apollo* 158–61; Theognis 1.979–82; Pindar, *Nemean* 4.1–3; Bacchylides, *Dithyramb* 1.48–9; Democritus fr. DK 5; Gorgias, *Encomium of Helen* 10; Apollonius of Rhodes, *Argonautica* 1.23–31, 2.771–3, 4.491–912. This idea is also to be found in the section of Jakobson, Waugh and Taylor (2002: 231) entitled "the spell of speech

sounds": "that spell of the 'sheer sound of words' which bursts out in the expressive, sorcerous, and mythopoeic tasks of language, and to the utmost extent in poetry, supplements and counterbalances the specific linguistic device of 'double articulation' and supersedes this disunity by endowing the distinctive features themselves with the power of *immediate* signification".

14 For an illuminating survey of "language in ancient rhetoric and grammar", see Porter (2010b).

15 *On Style* 48 also notes how a series of ugly sounds (δυσφωνία συνθέσεως) produces grandeur, as in Αἴας δ' ὃ μέγας αἰὲν ἐφ' Ἕκτορι χαλκοκορυστῇ (*Iliad* 16.358). Later, the author comments on the use of hiatus for euphony, and of other ways of creating melodiousness and musicality in sentences (*On Style* 105). See also Andromenides in Philodemus, *On Poems* 1.21.

16 For an introduction to the theories of the Euphonists, see Janko (2000: 120–90, especially 143–90).

17 For the original theories of Democritus and Leucippus (who did not use the specifically linguistic term στοιχεῖον) see Democritus fr. 21 DK. Janko (2000: 281, n. 1); Porter (2010a: 319–20). On Epicurean, especially Lucretian views on sound, see further, pp. 18–19.

18 Dionysius of Halicarnassus, *On Literary Composition* 14.

19 On the linguistic realization of *dunamis*/*potestas*, see Porter (2010b: 517).

20 Cf. Montiglio in this volume.

21 Logue (1999: 242).

22 Stewart (1990) is an eloquent description of *where* we read: in the body.

23 On poetry and the "lower senses" of taste and smell, Stewart (2002: 32). Another way to put it would be to use Garrett Stewart's notion of "the opacity, the turbidity, the heft and viscosity, the malleable materiality, in short the *thingness* of language" (Stewart 1990: 15, emphasis in the original).

24 I need to note that several people have pointed out to me that the shelling of the pistachio *can* be a critical part of the sensual pleasure of eating the nut. This (striptease?) process – in Sarah Nooter's evocative words – might be attractive, or even essential for some, but the point remains that one needs to get past the tactile pleasure of the shell to experience the gustatory bliss of the nut. There is no simultaneous enjoyment of the pistachio and its shell and the climax of the experience is (for most eaters at least) the consumption of the fruit. On my analogy, Socratean listeners can acknowledge the attraction of the shell but the *telos* of their listening experience is access to the nut of *logos*.

25 *Phaedo* 65c5–9. Also *Parmenides* 132. Cf. Partee (1972: 117–18).

26 Culler (2015: 134).

27 Stewart (2002: 104): "[T]he sound of poetry is heard in the way a promise is heard. A promise is an action made in speech, in the sense not of something scripted or repeatable but of something that 'happens,' that 'occurs' as an event and can be continually called on, called to mind, in the unfolding present".

28 Montiglio (2012), Kossaifi (2012), Schlapbach (2015); before that, MacQueen (1990). For a reading that focuses on aesthetic questions but makes a different point, see LeVen (2017).

29 Chion (2012: 49).

30 Chalk (1960).

31 This is an instinct we see in Latin poetry, on which see Bettini (2008). Also André (1966).

32 On human words being used to describe and identify bird cries, see Kroodsma (2005: 5), where the white-throat sparrow is identified by its call "poor-poor-sam-peabody-peabody-peabody-peabody" and other examples. Daphnis here would be expanding on one way of listening to the bird's song. See also the Tennyson anecdote where the poet asks a young woman what kind of bird is meant in the poem called Maud, where "Birds in the high Hall-garden / When twilight was falling, / Maud, Maud, Maud, Maud, / They were crying and calling". One can also think of the Jubjub bird in Lewis Caroll Jabberwocky (so called because the bird goes "jub jub").

33 The idea that one can "hear" sounds (and semanticize them) differently is illustrated by Theocritus 6, where Daphnis and Damoetas describe a sound they both heard (a dog barking) with two different verbs (βαύσδει/ὑλακτεῖν), thus pointing to the fact that they do not just have a different interpretation, but also a different *experience* of the sound itself.

34 Plato, *Cratylus* 426c–7c; Dionysius of Halicarnassus, *On Literary Composition* 16.

35 Dionysius of Halicarnassus, *Lysias* 7.1–4. Cf. *Isocrates* 11.8–11; *Demosthenes* 58.19–22; *Letter to Gnaeus Pompeius* 3.17.1–7; Longinus (attributed), *On the Sublime* 15.2.

36 Stanford (1976, 1981).

37 Gurd (2016: 16).

38 https://en.oxforddictionaries.com/definition/overtone.

39 This is the memorable pun at the heart of Miles' song in Britten's opera *The Turn of the Screw*. It is no coincidence that the song is invented by a child, who takes an eerie pleasure in it, but it takes a very different meaning for the governess, and for the listener of the opera, who all wonder where the haunting song comes from and see different facets of an imaginary world parade in front of their eyes, just as the opera (and short story) rely on the suggestion that different worlds coexist.

40 On puns: Hammond and Hughes (1978) for verbal and visual puns, often sexual, Ahl (1985), Culler (1988), Ulmer (1988), Redfern (2000), "great, dirty, and punning minds think alike". For a related phenomenon, nonsense sound, Kidd (2014); for a cognitive approach to sound: Lippman and Dunn (2000), Kao, Levy, and Goodman (2015). A related phenomenon is that of ambiguity, on which see Stanford (1939).

41 Culler (1988: 15).

42 Breton (1924).

43 Culler (1988).

44 Ahl (1985: 253).

45 The expression is borrowed from Fontaine (2016). See also Fontaine's entry "pun" in Thomas and Ziolkowski (2014).

46 Friedländer (1941), Snyder 1980 (31 for quotation).

47 See Kidd (2014) especially 137–51 on sound-plays (151 for quotation).

48 Butler (2015). See also Butler (2013), this series.

49 For a thorough study of the acousmatic voice, see Kane (2014).

50 For a different take on Echo and listening after a delay, LeVen (2018).

51 On "the paradoxical status of repetition", see Rimmon-Kenan (1980). On other traditions of Echo poems and connections with the idea of subjectivity, Colby (1920), Hollander (1981). On the metaphorical work performed by rhyme, Hollander (1975: 157).

52 For the formulation, Ihde (2007: 4).

53 Bassett (1938: 156–7).

54 Nancy (2002: 31–2).

55 Culler (2015: 138), source also of the following quotation.

56 On pitch and prosody, see Allen (1973); on "sound, sense, and rhythm", see Edwards (2002).

57 For a cognitive take on the limited demands that can be put on a mind, and the necessary trade-offs operated in the processing of language, see Masterson and Kamhi (1992), and the studies they cite (1064–5); Miestamo, Sinnemäki and Karlsson (2008); and particularly Fenk-Oczlon and Fenk (2008).

58 Frye (1957: 272).

59 Stevens (1951: 89).

14
Principles of sound reading[1]

Shane Butler

> Before I could read, I was in the habit on a stormy day of spreading my arms to the wind, and crying out, "I hear a voice that's speaking in the wind".
>
> ——Tennyson, on his earliest poetic efforts[2]

The *Aeneid* has several beginnings. There are, of course, its first three words, classical literature's most famous incipit. Seven lines later, Vergil finally invokes his Muse, which is instead where the Homeric epics that are his principal models both begin. The invocation precipitates an opening portrait of the poem's prime mover, Juno, whose "wrath" (*ira*) echoes that of Achilles, source of the *Iliad*'s very first word (*mēnis*). This is followed by Juno's first monologue. The epic's action properly begins after all of this, when the angry goddess goes to find the king of the winds. It is to this last beginning, fifty lines into the poem, that we must now turn our ears. Here are the first fifteen lines of the Latin text, followed by their sonorous 1697 translation by John Dryden[3]:

> Talia flammato secum dea corde volutans
> nimborum in patriam, loca feta furentibus Austris,
> Aeoliam venit. hic vasto rex Aeolus antro
> luctantis ventos tempestatesque sonoras
> imperio premit ac vinclis et carcere frenat.
> illi indignantes, magno cum murmure montis,
> circum claustra fremunt. celsa sedet Aeolus arce,
> sceptra tenens, mollitque animos et temperat iras;
> ni faciat, maria ac terras caelumque profundum
> quippe ferant rapidi secum verrantque per auras.
> sed pater omnipotens speluncis abdidit atris,
> hoc metuens, molemque et montis insuper altos
> imposuit, regemque dedit, qui foedere certo

et premere et laxas sciret dare iussus habenas.
ad quem tum Iuno supplex his vocibus usa est.

Thus rag'd the Goddess; and, with Fury fraught,
The restless Regions of the Storms she sought,
Where, in a spacious Cave of living Stone,
The Tyrant *Eolus*, from his Airy Throne,
With Pow'r Imperial curbs the struggling Winds,
And sounding Tempests in dark Prisons binds.
This Way and that th' impatient Captives tend,
And pressing for Release, the Mountains rend;
High in his Hall th' undaunted Monarch stands,
And shakes his Scepter, and their Rage commands:
Which did he not, their unresisted Sway
Wou'd sweep the World before them, in their Way:
Earth, Air, and Seas through empty space wou'd rowl,
And Heav'n would fly before the driving Soul.
In fear of this, the Father of the Gods
Confin'd their Fury to those dark Abodes,
And lock'd 'em safe within, oppress'd with Mountain loads:
Impos'd a King, with arbitrary Sway,
To loose their Fetters, or their Force allay.
To whom the suppliant Queen her Pray'rs addrest,
And thus the tenor of her Suit express'd.[4]

Across the seafaring ancient world, the wind was a ready metaphor for the work of narrative itself: ostensibly teleological (propelling the Greeks to Troy and the survivors back home), but working all the while to keep the story from ending too soon (stopping the Greeks from sailing long enough to force the sacrifice of Iphigenia, or driving Odysseus extravagantly off course). In summoning the winds, therefore, Juno is doing nothing less than getting this odyssey (or rather, this *Aeneid*) going, and her earlier monologue has already made it plain that she will do so in the face of an opposing destiny (*quippe vetor fatis*), the story's inevitable but still, for her, infuriating, "the end".[5] Indirectly invoking another epic metaphor for narrative's thwarted forward motion, Juno attempts to play Penelope to the spinning of the Fates, even if this will only buy her time. She and we all know where this story is going to wind up, but the winds will wrinkle its fated thread, push its line out into space, across the map (first stop: Carthage!), lending to what is so far just an anticipated ending the dimensionality that English so suggestively calls a *plot*.

Remarkably, however, launching the plot is not the only poetic work that Juno is doing here. For these winds, we are told, contain within themselves "resounding tempests" (*tempestates sonorae*). They express indignation (*indignantes*) and produce an angry roar (*fremunt*), which is heard as a "great murmur" that rumbles through the mountains piled atop the cave in which

they are imprisoned and that even makes the very words with which we are told this hum (*magno cum murmure montis*, echoed later in *metuens, molemque et montis*). So too does the first line to describe them give us four spondees (i.e. eight long syllables) in a row, sonically miming their unremitting, bellowing rage against their cage: ***luctantis ventos tempestates****que sonoras.*

To release these noisy creatures, we must suppose, would be to unleash on the poem not just chaotic movement, but a torrent of violent, unruly sound. Threats to *cosmos* and *logos* alike, their imprisonment thus enacts a familiar kind of Lacanian primal scene, inaugurating the realm of the symbolic (and so the rules of language) in the name of the father (*le nom du père*), with the no of the father (*le non du père*).[6] Indeed, Vergil's version gives us not one but two forbidding fathers: Jupiter, here invoked simply as "all-powerful father" (*pater omnipotens*), and his sceptre-wielding surrogate, King Aeolus, laying down the law in alliterated hard *c*s (*ac vinclis ac carcere*), banishing disobedience to a "vast cave" into the very mouth of which his name is inserted to block any further hiatus (*vasto**rex Aeolus**antro*). Thus shut up, or at least shut in, they may howl all they like.

Even a king of winds, however, must obey the queen of the gods, especially since, as we soon learn, he owes to her his very kingdom. Released from their prison on her instructions, the winds fall upon the sea and whip the waves over which Aeneas sails into a violent froth. Nevertheless, it is not the winds themselves that the poem asks us to hear, but a transferred sound, like that of the mediating mountain before:

> Insequitur clamorque virum stridorque rudentum.
>
> Then: the shout of men and the whistling of rigging.[7]

We shall dwell for much of this chapter on this one extraordinary line and the sounds it both describes and makes, which, although of exceptional interest, are typical (I shall argue) of constitutive themes of the broader Vergilian soundscape and, indeed, of ancient poetry *tout court*.

The first sound, "the shout of men" (*clamor virum*), seems an ordinary enough reaction to such calamity, except that it is not really a singular "shout" but a collective one, a "shouting", fusing their separate, plural voices into single sound that either is the voluminous sum of so much inarticulate vocalizing, or the drowning out of meaning by the aggregation of so many separate words uttered at once: barked orders, prayers to or curses of the gods, names of loved ones. The result, in either case, is a sound "of men", but it would not have sounded much like language.

The second sound is made instead by the strained ropes of the ships' rigging

(*stridor rudentum*). *Stridor* can designate a range of harsh sounds and here is surely more than ordinary creaking: "The Cables crack", translates Dryden, whereas an ancient augmenter of Servius' commentary on Vergil suggests the sound was more like a "whistle" or "hiss" (*sibilus*).[8] Servius himself notes that *stridor* here is used not metaphorically but "in its proper sense, for *stridor* is a property of ropes" (*proprie, nam in funibus stridor est*).[9] Nevertheless, he must offer this clarification because *stridor* is also regularly used of sounds made by humans and animals, and this arguably sets up not only a possible metaphor, but even a potential misreading of *rudent[i]um* as a substantive participle from *rudeo* (with a dropped *i* in the ending, as is common in poetry), designating not "ropes" but "bellowing" sailors or "braying" beasts.[10] What exactly are we hearing? Nothing less than pandemonium, as poetic language keeps blowing our efforts to read for meaning off course. And the dimming of linguistic clarity only amplifies the fact that the line is not just representing but making sound, with homoeoteleuton doubled up by polysyndeton (*clam**or-que***, *strid**or-que***), atop the *basso continuo* of the line's repeated *r* sounds. Add to this the metre's triple repetition of a dactyl plus a spondee, in which, with a little imagination, we might be inclined to hear the relentless pounding of the winds, except that we already have heard the winds sounding instead like steady spondees. In either case, let us say, we hear what we want to hear, but there can be no doubt that we are being called upon to stop and listen, as language itself surrenders to sensory overload.

I would like to suggest that even more is at stake here than the display of poetic virtuosity in daring acts of sensory mimesis. Let us consider six ways in which we might go about trying to make sense of our Vergilian line's high-volume sonority, to which I shall apply some familiar and unfamiliar names: orality, vocality, musicality, anthropophony, biophony, geophony, theophony, sublimity and, finally, logophony. These categories are not mutually exclusive and frequently overlap, as will be clear by the end; nevertheless, I shall set them forth more or less seriatim.

We begin with "orality". In a controversial book, Florence Dupont has argued that the modern treatment of ancient texts as (written) literature, rather than as the incidental supports or by-products of fundamentally oral practices, amounts to nothing less than a "crime" (her word) against ancient culture.[11] Accepting for a moment her provocation, there are several ways that we can connect Vergil to oral performance, beyond his tenuous link back, via epic form, to the sung transmission of Homer's epics, well before they were first written down. Despite its third word (*cano*), Vergil's epic would not have been sung, but like other Latin poetry, it would sometimes have been read to an audience, either by its author (an act which, probably more than anything else, constituted the "publication" of a poem), or by professional *lectores*, "readers".

In the former category, ancient sources actually tell us of private readings by Vergil to the emperor Augustus and his family.[12] And even beyond the latter, Vergil's ancient biographer tells of the performance of one of the poet's *Eclogues* by a famous mime, who would either have recited the verses herself or have danced while another performer read; Cicero himself, the same source rather implausibly claims, was in the audience of one such performance and found himself enchanted.[13] At a simpler level, Vergil is said to have drafted each day's new verses for the *Georgics* by dictation to a scribe (although later in the day, he "licked" them into shape, probably by putting stylus to wax himself),[14] and his later readers, although not incapable of reading silently (despite the odd persistence of this scholarly myth), might well have preferred to read poetry aloud (as some of us still do, even today), or even to have had it read to them. In each of these scenarios, the line's sonority – and by extension, that of the entire poem – gives the performer, professional or amateur, in public or in private, lots to wrap his or her *os* ("mouth") around. (Compare, for example, the performative cues implicit in the nonsense shouts and moans of Greek tragedy, explored by Sarah Nooter, this volume.)

Nevertheless, the biographer's invocation of Cicero begins to reveal the limits of reading for "orality", and not just because the story is itself far-fetched. Cicero is, of course, the enduring paragon of that art form whose name derives from the same *os* that gives modern scholars the abstraction "orality". But our picture of Cicero at work starts to complicate itself when we consider that many of his most famous orations either never were delivered orally (the bulk of the *Verrines*, the "divine" second *Philippic*) or were substantially reworked for written circulation (the *Pro Milone*, probably large parts of the *Catilinarians*). Add to this the evidence of his vast epistolary corpus, which reveals a political elite that often functioned as anything but a "face-to-face" society, plus his expanding work as an author of rhetorical and philosophical treatises explicitly presented as composed in lieu of public speaking. Yes, most of those treatises are in the form of dialogues, but of dialogues that offer only the thinnest pretence of representing real-world conversations. All of this is to say that texts were such an integral part of the texture of the lives of Roman elites that even Rome's most famous "orator" cannot be understood apart from them.[15]

What then of Rome's most famous poet? Like his oratorical counterpart, Vergil left behind an impressive body of texts (whether or not, as his ancient biographer also reports, he seriously contemplated burning his manuscript of the *Aeneid* on his deathbed). Although his poems' sounds could be and were given audible expression through various kinds of recitation, the same could be said even of most poetry written after the invention of the printing press. Turning ancient texts into transparent windows on oral practices looks less like

anthropological care than like a primitivist fantasy of a world before mediation. *Pace* Dupont, such was not the Roman world, or at least not Vergil's Rome. Nor was it that of Vergil's countless ancient readers. In any case, a repeated performance is itself no less a mediation of a poem – in the resonating body of the performer – than a written copy is, meaning that writing is something of a red herring and that orality only gets us so far. We still must ask: in oral or written form, why mediate *these* sounds in *this* way?

Our very willingness to speak of "poetic sound" reveals our belief that texts can embody something other than language proper. Even when poetry strives to obey Alexander Pope's dictum that "the sound must seem an echo to the sense", we hardly will be able to attribute every single sound to a strictly linguistic function, or even to a more broadly communicative one.[16] Poetic sound can thus be said to trace the contours of that complex quantity we call "voice", when by that name we seek to designate the matter in and as which language is audible to us. The generation of language does not *exhaust* such a voice and its sounds: something more always remains. Medievalist Paul Zumthor thus distinguishes "vocality" (*vocalité*), "the corporeal aspect of texts" and so "their mode of existence as objects of sensory perception", from the voice's linguistic work (to which he assigns the name *oralité*, which must be distinguished from the use of the same word by Dupont and others).[17]

> "It is not just sound that we hear; it is the sound of an individual person speaking sounds… . Such sounds might be imitations of sounds in nature, of animal cries, or of the most elaborately inflected nuances of human conversation, but in every case sound is here known as a *voice*".[18]

So observes Susan Stewart in *Poetry and the Fate of the Senses*, and I follow a similar line in *The Ancient Phonograph*, arguing that sound that either supplements or is superfluous to the work of language is part of what helps to establish what I call a text's "vocal claim", that is to say, its claim not just to represent a voice but, in a sense, to *have* one. Especially when under extraordinary pressure, or when expressing themselves in extraordinary ways (as by singing), but even when simply speaking, our voices are always audible as something both more and less than language, although apart from language they may be communicating nothing more or less than this: "This is my body. I am here".

Nevertheless, as it partly distinguishes itself from language, vocality has deepening consequences for linguistic acts. One way into these consequences is via Julia Kristeva's reworking of Benvenistan linguistics.[19] If Jacques Lacan helps us diagnose the patriarchal prohibitions of the storm scene's basic set-up, then Kristeva lets us turn, unabashedly, to the pleasures of its "genotext", as significance gives way to *signifiance*: not meaning *per se*, but meaning's

emergence, in the bodies (not least the maternal body, in Kristevan thought) from which language can never really be extracted. In the elegant phrases of Kristeva's early mentor and life-long fan Roland Barthes, our attention is drawn from ordinary semiosis to "the rustle of language", to the "shimmering" of signifiers, and in a famous formulation he pointedly derives from Kristevan principles, to "the grain of the voice".[20] In Mallarmé, Kristeva's favourite poet to think with, the devices for making language's generative sonorities audible include one of those we have been reviewing in Vergil: homophony. "Ses purs ongles", one of his most celebrated poems begins, which means "her pure fingernails," but which sounds like "c'est pur son", "it's pure sound".[21]

The Barthesian "grain" remains deeply rooted in language; he is particularly (and polemically) interested in the linguistically native sonorities of French *mélodie*, which "has little to do with the history of music and much with the theory of the text".[22] Here, as he puts it, "the *grain*, the grain of the voice when the latter is in a dual posture, a dual production – of language and of music" marks "the very precise space (genre) of *the encounter between a language and a voice*".[23] Mallarmé's "pure sound" seems born of such an encounter, but it simultaneously gestures beyond it, towards what his century theorized and embraced as "absolute music"; that is, not just music without words, but music fully liberated from the signifying pressures of song. As Eduard Hanslick put it in 1854 (with Brahms in his ears and Wagner in his sights),

> The fundamental difference [between speech and music] consists in this: while *sound* in *speech* is but a sign, that is, a *means* for the purpose of expressing something which is quite distinct from its medium; *sound* in *music* is the *end*, that is, the ultimate and absolute object in view.[24]

In other words, returning to Vergil, we could read our line not just as reaching deep into the very guts of language and its vocal tissue, but as gesturing quite beyond these, beyond even Wagnerian tone painting (although this too would be a way to understand what Vergil is doing), towards the distillation of "sound" from "voice" and "speech" alike in yet another *phōnē*-compound: the symphonic. And before we bristle at the idea of ancient epics as symphonies *in nuce*, let us remember that this is precisely how Beethoven seems to have heard them, setting the same dactyl-spondee repetition of our Vergilian line into the haunting music of his seventh symphony's second movement. Reading with Beethoven, it is not the straining rigging we hear as much as the anticipated strings of a future orchestra, or, perhaps, the remembered ones of a Homeric lyre. Now (my reader will object) I really am going too far! But my purpose is just to sketch some compass points for a reading that takes our Vergilian line seriously as sound art.

Nevertheless, although we might reasonably regard all sound made *by*

poetry as an essential aspect of the (ancient) poetic art itself, the same will not as obviously be the case of all sounds made *in* poetry, that is to say, of the soundscape a poem constructs, and so of the real or imaginary "phonosphere" that a poem purports to represent. (I borrow "phonosphere" from Maurizio Bettini in *Voci: Antropologia sonora del mondo antico.*[25]) Adapting and expanding terms used by Bernie Krause and his collaborators to label the sounds they recorded in an American national park,[26] we may divide this phonosphere into four (not always distinct) subcategories: anthropophony, biophony, geophony and theophony.

In ancient poetry, "anthropophony" – Krause's rubric for sounds made by humans – is of course dominated by speaking and singing, as well as less articulate sounds like the "shouting of men" (*clamorque virum*) in our Vergilian line. But it reaches well beyond vocalization to include, for example, the sound of the ships' rigging in the same line. Although the winds make this human technology hum, the sound is not a natural one and so signals (at least, let us suppose, to the creatures of the tempest-tossed sea) the presence of human beings, here in an environment to which, as is dramatically on display, they are poorly suited. So too, on such a reading, does the preceding "shouting of men" strike our ears as less the vocality of confused or emergent language than a sound simply marked by species and gender: there are men here. It is hard not to notice that *clamorque virum* sounds a bit like – and, indeed, gives us all the letters we need to spell – *arma virumque*. Eighty-six lines after that opening, however, singing the man (and his men) now requires Vergil to sing what is neither song nor speech. And the same echo of his beginning, unintentional though it may be, reminds us that the sound of a particular human technology arguably outstrips speech and song alike as the signature feature of epic soundscapes: namely, the clash of arms.

Plant and animal sounds – Krause's "biophony" – abound in ancient poetic soundscapes, although they are not in evidence in our line, beyond the potential misreading of *rudentum* discussed above. In the latter regard, it may be worth noting the three appearances of the homophonic participle *rudens* in the poem: twice to describe noisy creatures that are only partly human – the woeful former humans in Circe's zoo and the monstrous "half-human" (*semihomo*) Cacus, bellowing against his assailant Hercules – and once for Aeneas' ship, likewise erupting into bestial protest as its prow is made to strain against the angry waves.[27]

The sound of the earth and its elements, or "geophony", is instead the dominant sonic feature of Vergil's storm scene. Nevertheless, as has already been noted, it is not the winds themselves that we hear in our line, but the things they make resound. It is thus in relation to the geophonic that our line's complex meditation on the mediation of sound is best understood, since the

notional chain of events is, first, the transfer of the winds' own sound into the sounds made by the sailors and their ships, and secondly, the translation of this into Vergil's (sonorous) words. We can try to make the line crudely mimetic, either via its repetitive metre (as discussed above) or by hearing in its alliterated *r*s something like a roar. But this only underscores the subtlety of Vergil's soundplay, since it is not the roar itself that the line is actually describing.

Let us call sounds attributable to gods "theophony", following the pattern established by Krause, although the gods are not part of the sonic order he himself aimed to map. Sounds believed to be of divine origin were a key part of the lived soundscape of antiquity and include sounds we might otherwise regard as biophony or geophony, such as the rustling leaves of the oracle of Zeus at Dodona, or the same god's ubiquitous thunder. (Compare Vergil's own description of thunder's manufacture at *Aeneid* 8.429ff.) In Vergil's storm scene, the winds are gods and their sounds arguably as much divine as natural. As winds, however, they are something of a special case in the poem, in that they remain invisible: their theophany (i.e. the manifesting of their presence to mortals) is limited to their theophony. Like Aeneas and his men, we are made to hear but not to see them (although we do see their effects). Compare Neptune, who rises from the depths a few lines later to rebuke the winds by the names that mostly comprise the extent of Vergil's personification of them. There, as is usually the case, a god makes an appearance *in order to speak* (we already have seen and heard Juno do the same); the winds, by contrast, can only roar.

Neptune's intervention, in fact, provides a retrospective key to the reading of the episode across these sonorous subcategories. Significantly, it is a "great murmur" that rouses the god from the deep:

> Interea **magno** misceri **murmure** pontum
> emissamque hiemem sensit Neptunus et imis
> stagna refusa vadis, graviter commotus, et alto
> prospiciens, summa placidum caput extulit unda.

> Mean time Imperial *Neptune* heard the Sound
> Of raging Billows breaking on the Ground:
> Displeas'd, and fearing for his Wat'ry Reign,
> He rear'd his awful Head above the Main.[28]

One of the best ways into the stakes of Latin literary soundscapes is via their remarkably frequent "murmurs". To begin with, the word itself, *murmur* in Latin as in English, is a special item in either language, in that it demonstrates what linguists call iconicity, which is to say that it offers linguistically built-in onomatopoeia, seeking not just to signify a sound but to reproduce it, in its

reduplication of a single syllable (*mur-mur*) and in the growling hum of its specific consonants (*m*, *r*), which mostly drown out the vowel between them. Indeed, Quintilian includes *murmur* among three examples of primordial onomatopoeia in the Latin lexicon:

> Onomatopoeia quidem, id est fictio nominis, Graecis inter maximas habita virtutes, nobis vix permittitur. Et sunt plurima ita posita ab iis qui sermonem primi fecerunt, aptantes adfectibus vocem: nam 'mugitus' et 'sibilus' et 'murmur' inde venerunt.
>
> *Onomatopoeia*, literally "the fashioning of a name", counted among the greatest virtues by the Greeks, is barely permissible for us. There are many such coinages by those who first created the language, fitting their voice to their impressions. For *mugitus* (moo-ing) and *sibilus* (hiss) and *murmur* (murmur) are thus derived.[29]

In practice, however, "murmur" quite often does not designate an original or intended sound but, rather, a sound transformed by the bodies and other media through which it must pass. Let us briefly consider some comparative examples from the *Metamorphoses* of Ovid, an author whose soundscapes I have discussed elsewhere.[30] (See also Pauline LeVen, this volume.) Ulysses' men, transformed into pigs by Calypso, try to speak, but out come only "murmurs". The severed head of Orpheus can only emit a "murmur", but if we trace that mournful sound to its source – that is to say, to the description of the same scene by Vergil in the *Georgics*, which Ovid is imitating and transforming – then we potentially learn that he is trying to say "Eurydice". (Here, the distorting medium is not just Orpheus' still-dying tongue, but poetic tradition itself.) In the cycle of stories Ovid has Orpheus sing after Eurydice's death but before his own demise, the princess Myrrha delivers a suicidal soliloquy that the reader hears in full, but her nurse hears only "murmurs of words" (*murmura verborum*), because she can only listen through a closed door.

Vergil's Neptune, who has heard the muffled fury above from deep underwater, may thus be compared to Myrrha's nurse, although it is not clear whether any "words" spoken or shouted by Aeneas and his men form a significant part of the transmitted din. The real noise-makers are of course the winds, who already have produced the mediated "murmur" we encountered above (the poem's first), when they were still locked in their cave, *indignantes, magno cum murmure montis*. Again and again, in fact, we hear the winds only via a medium on which they act. When Vergil writes that the shouting of Aeneas' men "comes next" (*insequitur*), Servius explains, this is "because this had been preceded by the sound of the winds (*ventorum sonus*), which itself we can call a *clamor*",[31] since this last word, normally applied to sounds made by humans, appears in poetry for biophonic and geophonic sound as well. Indeed, Vergil completes by negation his assimilation of the collective *clamor*

of the sailors to the sounds that surround them – all generated by the winds – by comparing the violent sea's sudden calm at the arrival of Neptune to the attentive silence, ears pricked, of a rowdy mob at the sight of a man who commands great respect. Vergil's poem has more murmurs in store, including one in book 4 that will echo the entire formula (*magno misceri murmure*) that summons Neptune, although there it will instead announce the thunderstorm about to trap Aeneas and Dido in their own cave:

> Interea magno misceri murmure caelum incipit.
>
> Meanwhile the sky began to churn with a great murmur.[32]

In both instances, as in the poem's equally alliterative first murmur (*magno cum murmure montis*), the murmur itself has been allowed to infect the words around it; in this way too it functions as language's partial undoing and release into sound, albeit a sound that still signifies, portentously.

If the storm scene's various sounds blend, by the time they reach the ears of Neptune, into an undifferentiated murmur, then what does this tell us about what we ourselves have heard? After all, we too hear through a medium: not deep water, but the resonant language of poetry. It is important to note that what Neptune hears is not only the acoustical amalgam of the chaos above the surface, but the signature sound of the medium through which he listens. For no natural object is more often described by Latin writers as "murmuring" than moving water, from bubbling brooks to roaring cascades to the sea itself. The last of these is the single sonic example in a list of non-visual metaphors offered by Cicero in his treatise *On the Orator*: "fragrance of urbanity, softness of human feeling, murmur of the sea, sweetness of language", *odor urbanitatis et mollitudo humanitatis et murmur maris et dulcitudo orationis*.[33] Strikingly, the sea's murmur is the one item on this list that does not require some kind of synaesthetic leap (one does not ordinarily smell urbanity, touch human feeling or taste language): sound is a sensory domain already proper to the sea. Cicero regards the sea's murmur as a metaphor because he supposes that this particular kind of sound properly belongs to animate beings, or perhaps only to humans. But established metaphors like this one tend to flow in both directions: can we not instead say that it is the murmuring human that sounds like the sea, that the sea really does "murmur"? Equally striking is the alliterative phrase itself (*murmur maris*), leading directly to a metaphor that might itself aptly be applied to it: "sweetness of language". Cicero's own sweet language (so it is described, lovingly, by Petrarch[34]) is forever murmuring, and frequently roaring; so too Vergil's, of course. A murmur, in other words, can be far more than inarticulate mumbling: perhaps we hear the sea, perhaps its poetry.

What is the difference between sounding like the sea and sounding, like the sea? How many deep questions can be said to lie beneath the surface of this one! One of these has been lurking in our material all along, and it regards nothing less than what we may regard as the definitional question of the study of sound in literature: are its proper objects the sounds *made by* poetry, or the sounds *represented by* poetry, or both? The students of classical literature have tended to approach these two types of poetic sound together only when their mimetic aims conspicuously coincide, as in what may be the most notorious example of all, where Vergil makes horses gallop through a line of dactyls (clumsily reproduced in my translation):

> Quadrupedante putrem sonitu quatit ungula campum.
>
> Hoof pounds the ground that gives way to the sound of a four-legged gallop.[35]

Such sound effects are easy enough to make sense of; thus Dionysius of Halicarnassus singles out a similar dactylic line in the *Iliad*, describing instead the downward rolling rock of Sisyphus, for attention and praise.[36] But to build a theory of poetic sound from such examples is to make a caricature of poetry out of a caricature of the world (and underworld). We are left to wonder: what of epic's other dactyls and spondees? Critics periodically try to make these too mean something, including things less concrete than a horse, like "lightness" (said to be expressed by dactyls) and "heaviness" (said to be expressed by spondees). But anyone who has encountered such arguments knows how tendentious they can be. Of a line in a surviving fragment of a storm scene from Cicero's Latin translation of Aratus, *inflatum mare, cum subito penitusque tumescit*, W. W. Ewbank comments, "The rhythm of this verse with the repetition of 't,' 'p,' and 'u' well represents the surging water of the sea. The alliteration on 's' throughout the whole Fragment is almost certainly intentional in imitation of the whistling of the wind".[37] To the extent that Ewbank is not simply hearing things that are not there (he himself is not sure, regarding the whistling wind, and one could similarly doubt several of my own readings thus far), then we probably must regard any such effects as further vices of the overwrought style that won Cicero's poetry ridicule already in his own lifetime.

For the early New Critic (and poet) John Crowe Ransom, it is instead precisely the *heterogeneity* of sound and sense that enables them to function "ontologically", that is, to constitute a poem as a thing that is. (He compares the bigness and the redness of a big red apple, both of which are constitutive of the apple in question but neither of which can be assimilated to the other.) Accordingly, Ransom rejects the whole notion of poetic sound as an echo of sense:

> And finally we must take account of a belief that is all but universal among unphilosophical critics, and flourishes at its rankest with the least philosophical. It is this: the phonetic effect in a poem not only is (a) metrical and (b) euphonious, but preferably, and very often actually, is (c) "expressive"; that is, offers a sort of sound which "resembles" or partly "is" or at least "suggests" the object that it describes. It is necessary to say rather flatly that the belief is almost completely fallacious.[38]

Ransom's correction of the relentless sense-making of critics is both satisfying and salutary, but it leaves something out. Dactylic horses and the like are rare in ancient poetry, and so too are passages where sound can persuasively be said to echo sense in some less tangible way. But sonorous verses that describe sound without miming it are not hard to find, in part because the particular landscapes, seascapes and other settings of ancient poems are themselves such noisy soundscapes, a fact which itself seems unlikely to be an accident. Unlike the horses, this sonic doubling without correspondence is, in fact, far too common to be explained away as the exception that proves the rule. What, though, are such doublings doing? The ontological stakes here are slightly different from those of a "big red apple", for reasons that I shall try to explain in a moment. For now, let me just say that if what we encounter here is the poem's being, then it is not necessarily the poem's being *as a poem*; in fact, what may well be happening here is the poem's *ceasing to be* such, that is to say, its becoming another kind of object, at least partially.

Let us take a brief although not inconsequential detour before returning to the questions just raised. Our Vergilian scene is one in which both ancient and eighteenth-century theorists readily would have found signature elements of the sublime. Longinus, to give the traditional name of the author of the ancient treatise *On the Sublime*, never discusses Vergil, but he takes collective positive note of the storm scenes in Homer's *Odyssey* (which Vergil imitates, of course), regarding these as highlights in a poem he finds generally less impressive than the *Iliad*. (Strikingly, Longinus faults the style of Homer's sequel with an oceanic simile: "It is rather as though the Ocean had retreated into itself and lay quiet within its own confines"[39]). Longinus also gives close attention to a passage in the *Iliad* that provides an extended comparison of Greek soldiers under attack by Hector to terrified sailors facing an unstoppable storm at sea.[40] By contrast, he critiques defects of a famous storm scene in Herodotus.[41]

For Edmund Burke, in *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful*, first published in 1757, real storms and shouts are already potentially sublime:

> The noise of vast cataracts, raging storms, thunder, or artillery, awakes a great and awful sensation in the mind, though we can observe no nicety or artifice in those sorts of music. The shouting of multitudes has a similar effect.[42]

Longinus, however, unlike Burke, is not really interested in nature *per se*. For Longinus, the impulse towards the sublime comes from within the mind of an artist of language rather than from the world outside. In his pithy formulation (so handy that he himself quotes it from another work of his, lost to us), "Sublimity is the echoing back (*apēchēma*) of a great and noble mind (*megalophrosunē*)".[43] The acoustic nature of this reflection is striking: sublime language *sounds* great to Longinus, although just what that means is hard to know, given his pointed interest in content and "imagery" and his failure to mention even once metrical form or any other sonic values of the poetry and prose he singles out for praise. Had he commented on our scene, Longinus doubtless would have noted Vergil's ability to make us see the storm as it "lifts the waves to the stars" (*fluctusque ad sidera tollit*), a phrase that Burke's contemporary Johann Gottfried Herder borrows to describe the ocean-like soul contemplated by the "philosopher of feeling".[44] But about the echoed sounds of such a soul, Longinus leaves us mostly in the dark.

Longinus' is not, in fact, the last word (or the first) on the sublime in ancient thought, although a survey would take us far afield and in any case is best left in more capable hands.[45] Suffice it to say that what we might see as an overrunning of language by sound in a scene of the overrunning of the world by the same (even if not by the same sounds) may well contribute to its grandeur. Even so, sublimity will hardly account for all instances of sonic doubling (grandeur, paradoxically, is not a very capacious category!). What we need, I think, is a way to learn from the sublime something like a general theory of poetic (or even, more broadly still, linguistic) sound. "Logophony", which I offer here as a new term, broadly embraces the sound(s) of language (*logos*). It is preferable to a more familiar term like "sonority" only because the latter can be applied to non-linguistic objects. Logophony, by contrast, is inseparable from its murmuring medium. And crucially, logophony, as I would conceive it, includes both the sounds *of* language and the sounds represented *by* language; indeed, it marks no strong distinction between the two.

Nevertheless, let us begin to consider how logophony might help us by reviewing that logophonic quantity of the first category (the sounds *of* language) that is where most stories of ancient poetics begin: namely, the metre of the Homeric epics. Let us seek to hear that familiar sound, though, through Roman ears. Early Latin poets had other metrical options, as well as non-metrical stress-based rhythm, but they eventually found Homer's Siren-song irresistible. The story of Rome's inheritance of Greek metres has been taught to us for so long that it can hardly be made to seem strange again; still, let us remind ourselves that it gives us an artificial sound sourced from another artificial sound. In other words, for Ennius, "who used to say he had three hearts (*tria corda*), because he knew how to speak Greek, Oscan, and Latin",

and who with his *Annals* gave Rome its first major poem in the metre of Homer, the *Iliad* and *Odyssey* were as much a part of a pre-existing soundscape as were the wind and sea of his native Apulia.

Vergil, for his part, was raised equally on Homer and Ennius (the latter died a full century before Vergil was born and quickly became a schoolroom staple), and it may not be too much of a stretch to suppose that one effect of Vergil's choice of Homeric subject matter was to make the hexameters that Ennius had made sound Latin sound Greek again. In any case, Vergil signals his acoustic attention to his Homeric model already in his first three words, which unsurprisingly launch his epic in the metre of Homer but also, more strikingly, although the matter is perhaps not noted as often as it should be, sample the specific metrical pattern (the same feet across words of the same syllables leading to the same caesura) of the *Iliad*'s own first three words, which likewise introduce the poem to come as song:

> Μῆνιν ἄειδε θεά ...
>
> Arma virumque cano... [46]

The connection, to be sure, is hardly a sonic anchor: eighty-six lines later, as we have seen, the singular hero has become a chaotic multiplicity (*clamorque virum*), and any song must be shouted against the wind. As sound has seemed to move from poem to poem, so it continues to move *through* the poem, sometimes repeating itself, sometimes changing to the point that it is barely recognizable. *Verba volant scripta manent*, "Words fly, but written ones remain", went the Roman proverb. Poetic sound lies somewhere between these extremes of mobility and immobility, like the murmur that moves through the troops of Turnus in the poem's final book: *serpitque per agmina murmur*.[47] Note that this sound slithers (*serpit*), not just like an *s*-shaped and *s*-sounding snake, but like the reader's eyes along the rank and file of Vergil's verses.

With these last considerations we have begun to return from the sounds of to the sounds in the poem. These too can be said to have sources: indeed, the kinds of sources that have always been the ordinary object of *Quellenforschung*. As already has been noted, and as we would of course expect, Vergil's storm replays those faced by Odysseus and his men in the *Odyssey*, as well as, perhaps, the Iliadic storm metaphor that caught the attention of Longinus, in which "dreadful wind-blasts roar against the sail".[48] But even more interesting literary breezes blow from closer to home. We may set aside Lucretius' contemplation of a shipwreck from the safety of shore, where the fact that the disaster is seen but not heard underscores the clinical distance of right-minded philosophy. Sonically fraught is instead the approaching storm in the translation of Aratus by Lucretius' contemporary

(and reader) Cicero, of which we already have considered a phrase:

> Atque etiam ventos praemonstrat saepe futuros
> inflatum mare, cum subito penitusque tumescit,
> saxaque cana salis niveo spumata liquore
> tristificas certant Neptuno reddere voces,
> aut densus stridor cum celso e vertice montis
> ortus adaugescit scopulorum saepe repulsus.
>
> So too bloated seas signal winds on the way,
> when they suddenly swell, and from deep within,
> and rocks lathered white with snowy seafoam
> vie to give back to Neptune the most mournful sounds,
> or when muffled shrieking, from summit descending,
> grows louder and louder by rock-rows repulsed.[49]

As he often does, Cicero here expands on Aratus' original, and the most striking addition is a new emphasis on echoed, mediated sound, especially the *voces tristificae* emitted by the rocks. Here it is not quite enough simply to note that *vox* is sometimes "sound" in poetic usage (as it is at *Aeneid* 3.556, where surf-beaten rocks too generate *voces*), since the whole line personifies the rocks as being in competition to reply to a personified sea with sounds/voices/words (all meanings of *vox*) that may make him sad.[50] The poem thus gives us a soundscape from which is emerging something perhaps already like a poem, perhaps, indeed, something like the very poem we are reading. We may be tempted to think of Tennyson (from my epigraph) standing on a similarly stormy shore, hearing "a voice that's speaking in the wind". Of course, Cicero's experiment is not exactly the same: Tennyson hears voices in real wind; Cicero, in the wind in Aratus.

And what of Vergil? He seems to have nothing more pressingly on his mind and in his ears than what Elaine Fantham hazards to call "Latin poetry's first and finest description of a voyage and sea-storm", although of it we possess only flotsam and jetsam: namely, a storm scene of the second-century BCE tragedian Pacuvius.[51] The storm occurs in his *Teucer*, the plot of which involves the return from Troy to Salamis of its title character, the half-brother of Ajax. In the vivid and colourful language of two probably continuous fragments preserved through their separate quotation by Cicero, the playwright's own origins as a painter are everywhere in evidence:

> Profectione laeti piscium lasciviam
> intuemur nec tuendi capere satietas potest.
> Interea prope iam occidente sole inhorrescit mare
> tenebrae conduplicantur, noctisque et nimbum obcaecat nigror;
> flamma inter nubes coruscat, caelum tonitru contremit,
> grando mixta imbri largifico subita praecipitans cadit,

undique omnes venti erumpant, saevi existunt turbines,
fervit aestu pelagus.

Joyful in our departure we did gaze
upon the fishes' frolics, and no surfeit
could seize us of our gazing. But meanwhile
'twas now near sunset and the sea rose rough
upon us; darkness doubled darker grew;
blackness of night; blackness of thunderstorms
did blind us; flickered flame amid the clouds,
all heaven shook with thunder; sudden hail
fell headlong, mingled plenteously with floods
of rain; on all sides every wind burst out,
fierce whirls of tempest rose; the sea did boil
with swirling swell.[52]

This spectacular word-painting shades into blackness and blindness that will continue to be pierced by sound, including but not limited to the thunder already described. Some of these sounds make their way to us, although through even more exiguous fragments. One, "the banging together of the ships" (*flictus navium*), would, in the dark, have been felt as much as heard. Two remaining fragments relay the other sounds:

armamentum stridor

a creaking of tackle

strepitus fremitus clamor tonitruum et rudentum sibilus

a roaring and clamour and clatter of thunderclaps, a whistling of the halyards

(trans. Warmington)[53]

The first phrase is preserved in the augmented commentary of Servius, glossing Vergil's *stridorque rudentum*. There, as we already have seen, Servius seeks to clarify that *stridor* is not a metaphor but a sound actually made by ropes, and his augmenter seeks to add further clarification, giving us along the way part of the second fragment:

Stridor autem est sibillus. Pacuvius in Teucro: armamentum stridor et rudentum siblilus.

For *stridor* is a "whistling". Pacuvius in the *Teucer*: "the *stridor* of the tackle" and "the whistling of the rigging".

The two comments offer a remarkable combined effort to read for sound (and so to help others to do the same) in order to read soundly (which of course is the point of a commentary). Servius himself seems mostly to address the lexical obstacle to doing so, clarifying that the semantic range of *stridor*

embraces the ordinary sound of rigging in the wind, and that this, therefore, is what the reader should imagine (rather than personifying the ropes in order to hear them "shrieking"). The augmenter addresses instead the problem of nautical experience. That is to say, he comes to the aid of the reader who has not heard rigging in the wind, a category that seems to include himself, since he appeals not to experience, but to literary analogy: if Pacuvius can apply the same sonic term to a ship's "tackle" (*armamenta*), a category that includes its "rigging" (*rudenta*), and then call the sound of just the latter a "whistling" (*sibilus*), then the latter sound must comprise a large part of the former, to the extent, he suggests, that they may be treated as the same. (It helps the argument that the exact distinction between *armamenta* and *rudenta* is not always clear in Latin, a fact which itself is likely to reflect nautical inexperience as much as lexical sloppiness.) The utility of the analogy depends on the presumption that the meaning of *sibilus* will instead be clear to anyone, regardless of nautical experience. Still, given that this word's meanings range from "hiss" to "whistle", across a variety of human and non-human sounds, we might seem to have traded one set of sonic variables for another. For the commentator, however, the word's virtues surely lay less in its precision of reference than in its sonic indexicality, reducing the question of what we should be hearing to the one part of that sound that can be mimed in the alphabetic medium of poem and commentary alike: *sssss*.

The commentator's withering of Vergil's violent wind into its sibilance gives us a sonic caricature not much better, we might object, than that of hexametric horses. One could counter that a similarly sibilant sound produced by wind – albeit "the whistlings of a zephyr" (*zephyri sibila*) blowing gently through the countryside's hollow reeds – is nothing less than the very sound that, along with birdsong, first inspired our human ancestors to make music, according to Lucretius.[54] But something far more interesting is happening here than the specific sound that meets the reader's eye and ear. In their attempts to source Vergil's sound, either by locating its source in the scene (*in funibus*, according to Servius) or by finding a more familiar source of an identical or at least similar sound (in Pacuvius, and in the alphabet, according to the augmenter), the two commentators complement and supplement Vergil's astonishing reach, in and around the line we have singled out for attention, across sound in nearly all its conceivable domains. For the poet boldly mixes vocality, broader anthropophony, geophony and theophony; blends the sound of the storm itself with further sonic mediations of and responses to the storm's force; confounds the distinction between sound that is represented and sound that is reproduced; threatens language itself with acoustical chaos; but at the same time wrests from that chaos a perfectly dactylic line, which may or may not sound like pounding wind, may or may not sound like Beethoven, but which

most certainly sounds (full stop), so much so that even relentlessly silent readers like ourselves cannot resist reading aloud. What matters, I think we must conclude, is not so much the precise set of sounds we hear as it is the fact that we have been made so extravagantly to listen. Metrical foot after metrical foot, the ancient poet knows that sound is his reader's Achilles' heel. Once he has made us hear an *s*, what's to stop us from hearing the rest? Indeed, not only is the proper object of sóund reading (and of sound réading) neither this nor that particular sound, but it is not necessarily sound at all. Rather, the sounds of a poem help the sound reader to let go, to let the poem – including its sights, smells, tastes, textures – *happen*. How much less seductive is the "knowledge" promised by the song of the Sirens![55] The poem offers something far harder to come by: experience.

This probably sounds like a rather old-fashioned argument, and in some respects it surely is. Indeed, we are not far from Ransom's attentiveness to poetic "ontology". Or think of Cleanth Brooks and *The Well Wrought Urn*.[56] His very title wrests the thingness of poetry from sound: three words that progressively move deeper into our vocal apparatus (pronounce them with attention to where you make their sounds: *well*, *wrought*, *urn*), through the throat and into the belly of urn and body alike. Since the downfall of New Criticism, few literary scholars have been similarly inclined to treat words as sensory events. But this has left us in a double bind. First, cognitive scientists with sensitive scanners have pointed out that hearing or reading a sense-signifying word like "rough" or even the name of something known to be rough lights up the part of the brain stimulated by direct sensory stimulus (like that produced by touching a rough surface), which is distinct from the parts of the brain associated with language: "The brain, it seems, does not make much of a distinction between reading about an experience and encountering it in real life; in each case, the same neurological regions are stimulated".[57] And secondly, this means that modern science partly vindicates antiquity's own understanding of experience (*aisthēsis*) and imagination (*phantasia*) as, more or less and in one way or another, similar processes in the same animate flesh. Whether or not you've ever set foot on a ship, you've experienced a storm at sea, if only you've read Vergil, for example. And this is true whether or not Vergil himself knew sea storms first-hand, or learned of them from others, or heard (about) them in poems by others, or simply dreamt up his storm. (Needless to say, no real person could have witnessed such a storm and lived to tell the tale.) The question is not how well Vergil *represents* a storm, as if there were some real thing we have been struggling to hear *other than the poem*, but, rather, how he like Juno *creates* a storm, how his poetic storm (or stormy poem) actually *is* a storm (i.e. is an *event*, sonic and otherwise, to which we might appropriately apply the name "storm"), whatever it actually sounds *like*.

All of this brings us to the second resonant fragment of Pacuvius and, in particular, to the extraordinary reason for which its first five words survive.[58] In June of 51 BCE, as he set out from Italy to assume a provincial governorship in faraway Cilicia, Cicero began receiving a long series of letters from M. Caelius Rufus, "orator, rising politician and man about town",[59] the protégé he had defended with his celebrated speech *For Caelius* a few years before. Famous for their scintillating style, Caelius' letters from Rome aimed to keep their addressee abreast of the talk of the town. Already in the second of these, which seems to have reached Cicero along his Aegean route, there is scandal to report: the unexpected acquittal, on charges of electoral corruption, of the former consul M. Valerius Messalla Rufus, defended by the great Hortensius, who had been regarded as Rome's finest orator, before being upstaged by Cicero himself. Caelius reports that even Massalla's friends, himself among them, were stunned by the outcome; his foes, unsurprisingly, "attacked the jury with very loud shouts (*clamoribus maximis*) and made it clear that this was absolutely intolerable".[60] But the noisy dissent was not yet finished. "There's more: on the day after his acquittal, Hortensius came into Curio's theatre – I guess so that we could all feel joy at his joy". *Hic tibi*, "imagine it", Caelius continues, in the hard-to-translate deictic pointing of vivid description (*evidentia*) in Latin, along the lines of *ecce*, "behold". With this, however, Caelius does not introduce a sight, but a sound, and not a new one, but one we have all heard before:

> Add to this that, on the day after the acquittal, Hortensius walked into Curio's theatre, presumably so that we could all be glad that he was glad. Imagine it: *strepitus fremitus clamor tonitruum et rudentum sibilus.*

"This got even more notice", Caelius continues, "because Hortensius had reached old age without the experience of a hiss (*intactus ab sibilo*)".

Caelius' remarkable report exactly inverts the situation we encountered in the Servian commentary on Vergil. There, the chaotic and ineffable sounds of an impossible storm are boiled down to their sibilance; here, an actual hiss really is the main event, although it swells tumultuously in Caelius' report of it, in which it is hard to know where the supplemental sounds of the angry mob end, and the reporter's hyperbole begins. What exactly is Cicero supposed to imagine? The setting of the scene is itself part of Caelius' sonic prompting, for Curio's theatre was actually two theatres, made of wood (and thus resonant in particular ways Cicero would have known first-hand), which could be rotated and joined to produce what was Rome's first amphitheatre; in either case, this is a place built not just for seeing (the root meaning of "theatre") but for hearing, even if that sense is enshrined instead in the names of *odeon* and *auditorium*. Strictly speaking, all this makes it hard for us to know what kind

of spectacle was on offer that day, but Cicero may have been less in the dark. Indeed, if the theatre was being used just as a theatre, then it is not entirely impossible that the play was none other than Pacuvius' *Teucer*, since Caelius would thus be playing with Cicero, at a distance, a favourite Roman meta-sport, in which the naughty audience would respond to lines in the play as double entendres about current events and the individuals in their midst.[61] In any case, Caelius' aim is not so much to give Cicero an accurate account of the actual sound made by the mob and concentrated by architecture as it is to conjure, tragi-comically, the experience of that sound, and so what hearing it must have felt like for Hortensius, up to that point "untouched" (the literal meaning of *intactus*) by a hiss, much less by all he encountered that day. Once again, the point is not precise reference, nor, despite Caelius' wit, can the quotation be reduced to a matter of literary embellishment. Rather, he means what he says: of the sounds he and Cicero both knew – and both literature and noisy assemblies were very much part of their ordinary phonosphere – the hissing of Hortensius sounded much like the storm in Pacuvius. Again, what sound *exactly* was that? Our material leads us to the conclusion that any answer must be as chaotic as the storm itself, spilling across nearly all the realms of sonority we have reviewed.

Does this mean that in Vergil's storm we should hear, in addition to everything else, the roar of a Roman mob? Before my own readerly audience begins to hiss, let us remind ourselves that Vergil himself invites us to imagine exactly such a sound, as well as its absence. For when he rises from the waves, Neptune commands the respect so pointedly denied to Hortensius:

> Ac veluti magno in populo cum saepe coorta est
> seditio, saevitque animis ignobile vulgus,
> iamque faces et saxa volunt, furor arma ministrat,
> tum, pietate gravem ac meritis si forte virum quem
> conspexere, silent adrectisque auribus adstant,
> ille regit dictis animos et pectora mulcet,
> sic cunctus pelagi cecidit fragor, aequora postquam
> prospiciens genitor coeloque invectus aperto
> flectit equos curruque volans dat lora secundo.

> As, when in Tumults rise th' ignoble Crow'd,
> Mad are their Motions, and their Tongues are loud,
> And Stones and Brands in rattling Vollies fly,
> And all the Rustick Arms that Fury can supply:
> If then some Grave and Pious Man appear,
> They hush their Noise, and lend a list'ning Ear;
> He sooths with sober Words their angry Mood,
> And quenches their innate Desire of Blood:
> So, when the Father of the Flood appears,
> And o'er the Seas his Sov'raign Trident rears,

> Their Fury falls: He skims the liquid Plains,
> High on his Chariot, and with loosen'd Reins,
> Majestick moves along, and awful Peace maintains.[62]

Vergil's simile between the wind-swept sea and a political gathering enjoys a partial Homeric precedent, duly noted in the augmented comment of Servius: urged by Agamemnon to abandon the war, the assembled Greeks (called by Homer an *agorē*) are "stirred like the long waves of the Icarian sea, which the East Wind or the South Wind has raised, rushing on them from the clouds of father Zeus".[63] But Servius first notes a more recent parallel: in the opening remarks of his published speech *For Milo*, Cicero describes his client as often having endured "storms and tempests" in turbulent popular assemblies but confidently predicts better behaviour from the mob now surrounding the court.[64] The simile was, in fact, a common one, and a special favourite of Cicero's.[65]

With these precedents on his mind and in his ears (Vergil was old enough to have heard the last democratic assemblies of the Republic and conceivably could even have heard Cicero himself speak), the poet of the *Aeneid* has the tumult set in motion by one Olympian, Juno, calmed by another, Neptune. The comparison of the latter to the statesman is the poem's first significant simile, as Denis Feeney notes in an extended study of "First Similes in Epic" that pays particular attention to this example, connecting it to yet another intertext: the first simile of *On the Nature of Things*, in which Lucretius compares the invisible power of atoms to that of destructive winds.[66] Following then in a long line of readers who have taken the *Aeneid*'s statesmanlike Neptune as a figure for Augustus, stilling decades of civil discord, Feeney gives the entire storm scene a pointedly political reading:

> The storm begun at Juno's initiative unleashes the winds of Lucretius in order to destroy the *cosmos*, the *cosmos* of the Roman *imperium*, before it has even started… . In Homer's case, the concord threatened by disruption is illustrated by reference to the natural world; in the *Aeneid*, the natural world is itself one of the arenas for the establishment of concord, in a hyperbolic vision of a Roman empire which is fused with the world of nature, overcoming the threats of chaos within a providential order.[67]

This momentary calm, however, scarcely causes the poem to fall silent. Indeed, unruly sound lingers in the stilled air that Aeneas and his surviving men continue to breathe. Naturally, one can read this too as an ongoing struggle against disorder, and towards Rome. But similes flow in both directions: Homer and Cicero compare citizens to windy weather; Vergil reverses this. If, therefore, the poet of the *Aeneid* and of its opening storm is trying to score political points with and for his powerful patron, then he just as surely is invoking the political phonosphere in order to prime the ears of his Roman

readers for effects more acoustical than ideological.

One way or another, we should take the noisy explosions with which the poem begins as a cue to our reading even of the quieter moments to follow. Perhaps, indeed, the time has come to let antiquity give poetic sound new critical life in general. The twentieth century's "linguistic turn" made it harder and harder for literary critics to speak about aesthetic quantities, especially when they were semantically otiose. One noteworthy casualty was sound. But like his poetic predecessors, and countless poets to follow, Vergil returned to the world a breath of life thick with words, words that echo *in* that world, however close or distant their echoes *of* that world may be. Let us, therefore, listen like Tennyson to the wind, and learn to read as Vergil did: not just soundly, but resoundingly.

1 The pun of my title is a partial echo of (or more accurately, *furtum* from) the chapter of Joshua T. Katz in the first volume of this series, which includes a section titled "Sound Structure, Sound Structure" (Katz 2013: 169). Appropriately enough, I first *heard* him explain the double meaning of "sound structure" at the conference that inspired that volume before editing his written representation of the distinction as "sound strúcture" versus "sóund structure".

2 Tennyson (1897: 11).

3 The conclusions this chapter will reach about the essential importance of sonority itself to poetic experience, regardless of the specific sounds of this or that poetic form or figure, make an implicit case for the value of translations like Dryden's over the prosaic alternatives we have come to regard as more "faithful".

4 Vergil, *Aeneid* 1.50–64; Dryden (1697: 253–4), lines 76–96.

5 Vergil, *Aeneid* 1.39.

6 Lacan (1993: 183). Lacan uses only the former phrase, without directly pointing out the homophonic pun (in French) on the latter, which, however, is made plain by the immediate context, which regards the role of prohibition in the Oedipus complex.

7 Vergil, *Aeneid* 1.87. Translation my own, as are others in this chapter unless otherwise noted. The same line catches the ear of Michel Chion in a seminal work of sound studies; his brief observation on how "simultaneity … is perceived in terms of a succession" (Chion 2016: 10) is not entirely vitiated by his mistranslation of the line and misunderstanding of its polysyndeton, since the two phrases, although syntactically subjects (and notionally simultaneous), must still be given in sequence. The line will be echoed by Aeneid 2.313 (exoritur clamorque virum clangorque tubarum), yoking the storm scene to the equally noisy sack of Troy, narratively subsequent but logically prior: on the many connections between the episodes, see Putnam (1965: 8–17).

8 Rand (1946: 63). On his Pacuvian intertext, see below.

9 Rand (1946: 63).

10 On the dropped *i*, compare e.g. *venientum* at Vergil, *Aeneid* 1.434. Ahl (1985: 28–9) likewise calls attention to Vergil's play on the ability of *rudens* to mean both "rope" and "roaring", not just at *Aeneid* 1.87 but also at 3.561–2, connecting these to Varro, *On the Latin Language* 5.7, where Ahl reads Varro as highlighting (albeit elliptically) the same ambiguity in a phrase

from Pacuvius (*rudentum sibilus*), to which we shall turn, below.

11 Dupont (1999).

12 Suetonius, *Life of Vergil* 27, 32.

13 Servius on Vergil, *Eclogues* 6.11. See Butler (forthcoming).

14 Suetonius, *Life of Vergil* 22.

15 On the role of writing in the construction of Cicero's oratorical persona and career, see Butler (2002) and, further on the written mediation of his voice, Butler (2015: 161–95).

16 Alexander Pope, *An Essay on Criticism* 367.

17 Zumthor (1984: 11–12), my translation.

18 Stewart (2002: 109–10).

19 See especially Kristeva (1984).

20 Barthes (1977, 1985: 245, 259, 1986: 79).

21 Stéphane Mallarmé, "Sonnet en x" (or "Sonnet en yx").

22 Barthes (1977: 186).

23 Barthes (1977: 181).

24 Hanslick (1891: 94), first published in German in 1854. See further Dahlhaus (1989).

25 Bettini (2008).

26 Krause, Gage, and Joo (2011).

27 Vergil, *Aeneid* 7.16; 8.194, 248; 3.561.

28 Vergil, *Aeneid* 1.124–7; Dryden (1697: 256), lines 176–89.

29 Quintilian, *The Orator's Education* 8.6.31.

30 Butler (2013); Butler (2015); Butler (forthcoming).

31 Rand (1946: 63).

32 Vergil, *Aeneid* 4.160.

33 Cicero, *On the Orator* 3.161.

34 Petrarch, *Seniles* 16.1.1.

35 Vergil, *Aeneid* 8.596. The sentence begins, sonically, in the line before, with the raising of a battle-cry by the horses' riders: *it clamor, et agmine facto, / quadripedante*, etc. The ablative absolute interestingly echoes that of the poem's first brief simile, describing the winds, just released from their cave by Aeolus, sweeping forth *velut agmine facto* (1.82).

36 Dionysius of Halicarnassus, *On Literary Composition* 20.

37 Ewbank (1997: 220).

38 Ransom (1972: 38). Thanks to Jim Porter for once suggesting reading Ransom.

39 Longinus, *On the Sublime* 9.13, trans. Fyfe and Russell, on the basis of Price's emendation.

40 Longinus, *On the Sublime* 10.5 (quoting Homer, *Iliad* 15.624–8); 9.14.

41 Longinus, *On the Sublime* 43.1.

42 Burke (1823: 115).

43 Longinus, *On the Sublime* 9.2.

44 Herder (2006: 44).

45 Porter (2016).

46 The originator of the Homeric line really was singing, whereas Vergil certainly was not: the latter poet thus gives us music recorded from the former, whereas the former merely mediates music actually sung by the Muse. In other words, the phonographic claims of classical "literature" can here be traced back to the very beginning of that literature's pre-literate point of notional origin.

47 Vergil, *Aeneid* 12.239.

48 Homer, *Iliad* 15.626–7. Suggestions of other Greek intertexts are collected and expanded by Hardie (1983: 313–18).

49 Cicero, *Prognostica* frag. 3 (Ewbank). My translation follows, somewhat hesitantly, the suggestions of Ewbank, particularly regarding the meanings of *densus* and *saepe*.

50 Vergil, *Aeneid* 3.555–6 (*et gemitum ingentem pelagi pulsataque saxa / audimus longe fractasque ad litora voces*), likewise describing the sounds emitted by surf-pounded rocks, is cited by the *Oxford Latin Dictionary* as an example of *vox* designating a non-human "sound", but one wonders whether Vergil is imitating precisely the passage of Cicero's translation we are considering and, more importantly, whether the sounds are anthropomorphized as *voces* because we are meant to understand them as echoes of the already anthropomorphic *gemitus* ("groan") of the sea.

51 Fantham (2003: 100), quoted by Boyle (2006: 103), the latter of whom provides (100–6) an excellent discussion of the fragments of the *Teucer*. Cf. Wigodsky (1972: 85–6). Vergil also has on his mind his own earlier storm scene in *Georgics* 1.316–34, the language of which is briefly reprised in the *Aeneid*'s opening storm and, more remarkably, resounds in storm similes throughout the poem, a matter carefully discussed by Briggs (1980: 81–91).

52 I have combined and slightly adapted Warmington's Loeb translations of the two fragments comprising lines 353–60 of his text in *Remains of Old Latin*, vol. 2 (Warmington 1936: 294–5).

53 These are lines 363 and 365 (*flictus navium* is line 364) in *Remains of Old Latin*, vol. 2 (Warmington 1936: 296–7).

54 Lucretius, *On the Nature of Things* 5.1382. On Lucretius on natural sound and the origins of language, see Zinn, this volume.

55 Homer, *Odyssey* 12.189–91. On their song, see Montiglio, this volume.

56 Brooks (1947).

57 Murphy Paul (2012).

58 As noted above, its final two words (*rudentum sibilus*) are also known from Varro and from the augmenter of Servius.

59 Shackleton Bailey (1977: 382).

60 Cicero, *Letters to Friends* 8.3.1 (79).

61 A roughly contemporary incident of this kind of *theatralis licentia*, regarding the lines of a pantomime redirected by the audience (possibly prompted by the author-actor himself) as a complaint about the power of Julius Caesar, who was in their midst, is recorded by Macrobius, *Saturnalia* 2.7.4–5. More examples and discussion in Coleman (2011: 347–50). In

Letters to Atticus 39.3 (2.19.3), Cicero himself describes the performance of a tragedy in which the line "To our misfortune you are great" was made to refer to Pompey ("the Great"), prompting "a thousand" encores. He takes up the general phenomenon in his oration *Pro Sestio* 118–23, describing performances of several different tragedies in which lines were taken by the audience as protests against his own plight, including his exile and the destruction of his house; in one instance, the actors themselves supposedly hurled their lines directly at his enemy Clodius.

62 Vergil, *Aeneid* 1.148–56; Dryden (1697: 257–8), lines 213–25.

63 Servius on Vergil, *Aeneid* 1.148. Homer, *Iliad* 2.144–6 (trans. Murray and Wyatt).

64 Cicero, *For Milo* 5. The ancient commentary of Asconius reveals that Cicero's confident remarks (and, indeed, the entire published oration) are part of an elaborate fiction, since, at the actual trial, the menacing mob had succeeded in flustering him. Dio, *Roman History* 40.54, suggests, indeed, that Cicero was so frightened that he barely spoke at all, and provides the further report that, upon reading the published oration while in relatively comfortable exile, Milo himself exclaimed that, had Cicero really delivered such a speech, he himself would not then be eating mullets in Marseilles. On Cicero's publication of his speeches generally (including the various fabrications this entailed), see Butler (2002).

65 See, for example, Cicero, *For Murena* 35–6; *For Plancius* 15. Quintilian, *The Orator's Education* 8.6.48–9 quotes from the first of these and from the *For Milo*. In these and other examples, however, as in Homer and other Greek precedents, the stated point of the comparison regards the sudden onset of political turbulence and the wide fluctuations it produces in popular opinion; any sonic dimension usually remains implicit. The matter surely would repay wider study.

66 Lucretius, *On the Nature of Things* 1.265–97; Feeney (2014). For more on the Vergilian storm's debt to Lucretius, see Hardie (1986: 91–3, 180–3, 237–40). Feeney further unpacks the simile's debt to Homeric storms (to which he contrasts Homer's bee similes, likewise imitated by Vergil, which instead illustrate nature at its most orderly) and to Hesiod, *Theogony* 81–93. "In general", Feeney (189) notes, "the first similes in epic are programmatic for the cosmos of the whole poem, for they present an icon of the relationship between human beings and the natural world, which in turn gives us an icon of the poem's relationship between order and disorder, chaos and harmony".

67 Feeney (2014: 212–14).

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